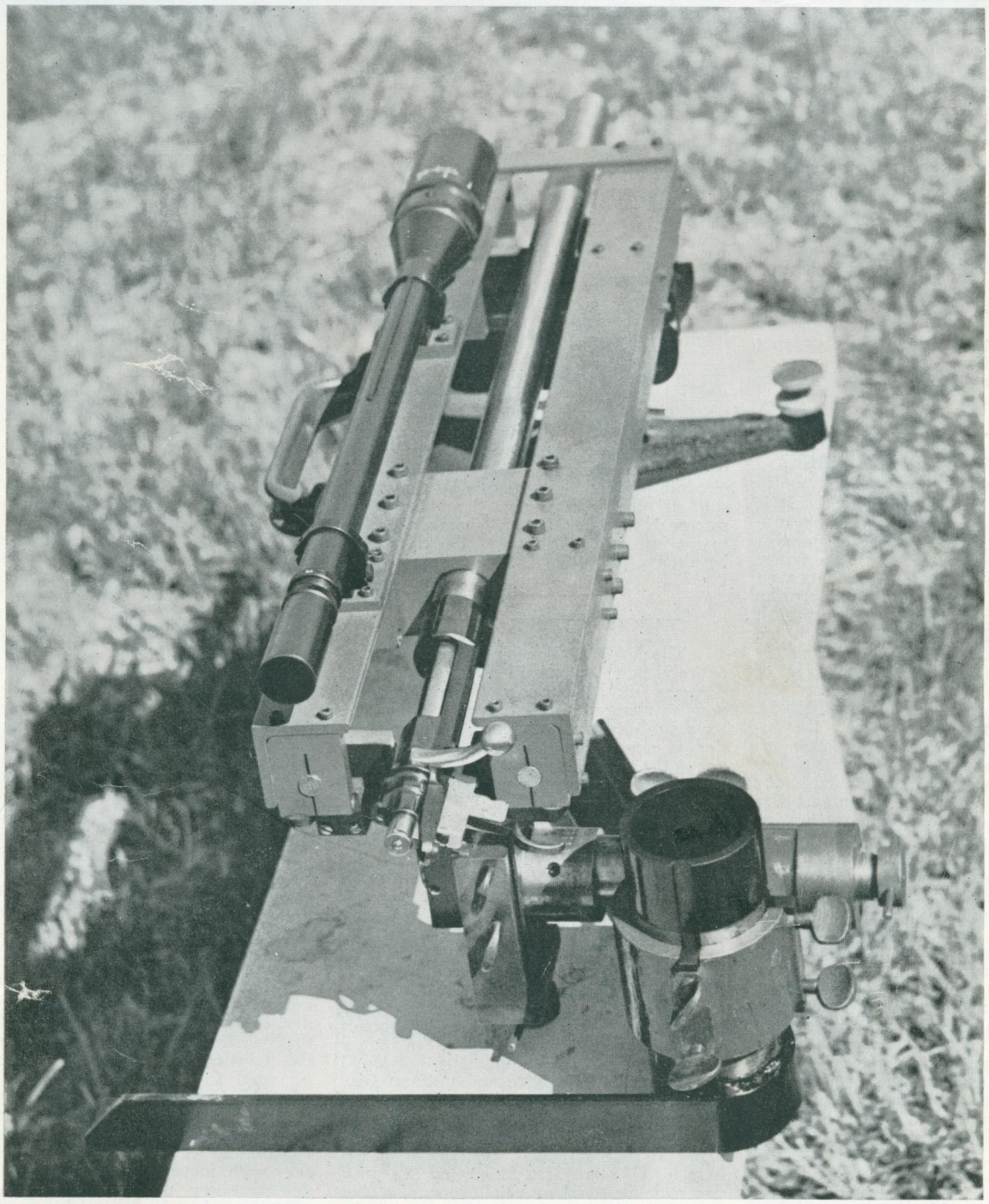
AUGUST 1964
Vol. 9, No. 3
35 cents

Precision SHOOTING



a magazine for Shooters by Shooters

Precision Shooting is published monthly by Precision Shooting, Inc.

Editorial and business office at Lyndonville, Vt. 05851.

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Subscription rates:—To the U. S., Canada and Mexico, 1 year $4.00, 2 years $7.00, 3 years $9.00. All other countries $1.00 per year additional.

Change of address requires 30 days' notice.

Place of Publication—Cowles Press, Inc., 83 Eastern Ave., St. Johnsbury, Vermont. Second-class postage paid at St. Johnsbury, Vt.

COVER PHOTO

A rifle and rests outfit designed and used in unrestricted rifle, open class bench rest competition by Robert Stultz, Kansas City, Missouri. The rifle assembly is a Hart barrel on FN Mauser action. The scope is a 2 inch Unertl in 32X power. Rifle is chambered for the 222 Rem. cartridge. The rifle and its mounting (so-called stock) weighs 48.5 lbs.

With this outfit, Bob Stultz was winner of the early season shoot at Wichita, Kansas, with a .4026 MOA grand aggregate (reported in May 1964 issue) and in June was runner-up in a shoot at Kansas City (reported in this issue).

The NBRSA unrestricted rifle, open class, provides an almost unlimited field for experimenting with the means for proving results in competition.

The photo is provided by Gil Baltzer, Kansas City, Kansas.

WHAT IS THE IDEAL REFEREE?
By Fred W. Hallberg

This is only one man's opinion. It is certainly not a picture of the writer because he has had more than his share of failures. It is simply a picture of what the writer would like to see in himself or others who accept refereeing assignments. Perhaps the addition of opinions of others will establish a composite of the personality which we can try to emulate but never completely achieve. One of the finest examples of refereeing I have seen in recent years was that performed by Mr. Hart at the 1963 St. Louis benchrest match. He knew the answers, he was patient, and he knew his mechanics of the shooting game as they applied to both weapon and ammunition.

Too many referees assume an excessive disinterestedness. A few will set up an umbrella and a reclining chair at the far end of the field, relax with a magazine or novel, and completely withdraw from the activities. It seems to me that a referee should have more to contribute than that. Everyone cannot have the personality of a public relations officer but that should not prevent him from mingling with the shooters and engaging in their conversations. Familiarity does not necessarily breed contempt. If such a situation can develop, the referee should not accept his assignment.

Whenever possible, a referee should satisfy both parties in a situation as to the requirement for his decision or the accuracy or reasonableness of what he decides. No referee can be letter perfect on all rules and, therefore, if there is ever so slight doubt either way, he should always refer to the rule book and read aloud to the parties concerned the applicable passages. Such a settlement, based directly on the "law," leaves a better feeling in the minds of those concerned and sometimes it even helps in promoting the general success of the entire match. There are cases when a particular individual can never be satisfied but, happily, that does not occur too often. Such cases occur most frequently in pistol matches when a shooter insists that two shots passed through the same hole although there is no visible or physical means of determining it. However, most people are reasonable and, if your decision is based upon a proper approach, the rank and file will agree with you.

A referee must never depend upon an exercise of logic. The writer has had experience with such mistakes. Rules are logical but, unless you know the entire spectrum of thought that created a given rule, it is best to refer to the rule book and read it to the affected parties.

Referee should avoid unnecessary splitting of hairs. Such procedure can be guaranteed to turn an otherwise happy gathering into something much less pleasant. Most shooters who have been in the game a long time will recall some such over-officious character. Fortunately they are few and far between.

All representatives of the NRA should be promoters of the shooting game, be they referees, directors, or what have you. They should be capable of sitting in with the inevitable groups that form behind the firing lines and partake in the general conversation. This is not only a pleasant social experience—it is also an instructive one. Anticipation of such conversation and the mingling with shooters of all kinds and from all walks of life is the real reason this writer has accepted so many refereeing assignments. He has done as much shooting and experimenting as anyone but he has never come away from a match without at least one new idea to mull over during his leisure moments.

And last but not least, there is no reason why the referee cannot be helpful to and tolerant with the management of the match. It is always possible to point out deficiencies and make suggestions without making oneself obnoxious. Most people who run matches put their heart and soul into the job and they deserve all the moral support they can get. Sometimes the referee is in a position to favorably tip the scales just enough to make the difference between a successful or unsuccessful event.

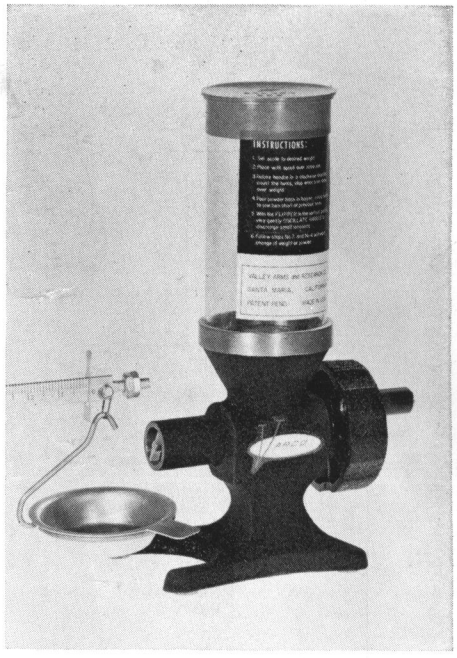
VARCO POWDER DISPENSER

The VARCO Powder Dispenser is an entirely new instrument (Patent Pending) designed for handloaders who weigh their powder charges. With its use, the operator may deliver a complete charge of powder, of any weight, from the powder hopper to the scale pan, precisely.

The Dispenser is designed, engineered and manufactured by the Valley Arms & Research Co. of Santa Maria, California and is being nationally distributed by Wisler Western Arms, Inc., 205 Second St., San Francisco 5, California. Its retail price is $18.50. If the instrument may not yet be available from one's local dealer, it may be obtained directly from the distributor in San Francisco.

As may be noted in the illustration, the powder hopper is a clear plastic cylinder which fits into the top of the cast bronze base. The bottom of the hopper is a polished cone in the top of the bronze base which discharges into the horizontal dispenser tube. Positive and uniform flow of powder from hopper bottom to end of dispenser tube is accomplished by an auger conveyor which is turned by a little hand-crank at its rear end. The bottom of the base is "U" shaped to fit around the powder scale pan. Four small sponge rubber discs form the "feet" of the base and make it really skid proof—one has to take the instrument weight off the feet to move it on a table or bench top.

In use, the dispenser is set up (or down) with the end of the dispenser tube over approximate center of the scale pan,



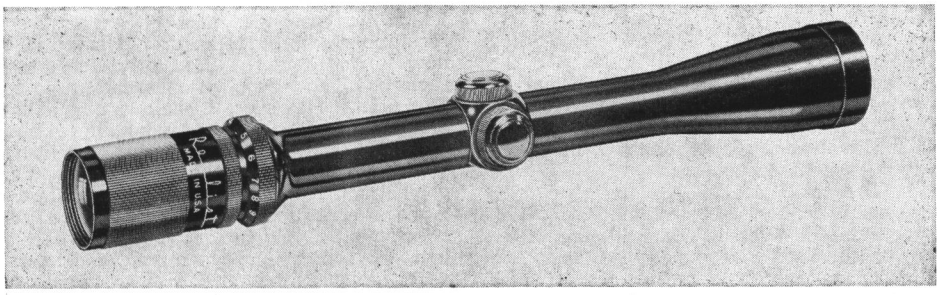
after scale has been balanced and set for the desired charge. The little crank is turned clockwise until a normal flow of powder is established, and the powder in the pan then being returned into the hopper. With scale pan back in place, and keeping count of the number of turns, the crank is turned until the scale beam rises, usually too much. Powder in the pan is returned to hopper and the operation repeated, but with one fewer turns. If the scale beam barely rises or does not go above zero on the pointed scale, that is the needed number of turns. If the beam pointer is below zero, waggling the crank handle back and forth will occilate the auger conveyor to dribble the small amount o fadditional powder needed to bring the scale to balance.

When one starts to use the dispenser, one will probably find that it takes just about as much time to weigh a charge as it did to throw an under-charge from a measure onto the scale pan and add the small amount of additional powder with a Little Dripper or some other method, but that the use of the dispenser is more convenient. As one becomes more accustomed to use of the dispenser, one will probably find that accurate weighing is a little bit faster than when using the older method—for powder charges up to about 50 grs. For the heavier charges for the bigger Magnum cartridges, use of the dispenser is probably no time saver but its convenience is still a desirable factor.

As illustration, number of full crank turns for some powder charges in the normal range of rifle cartridges is: 3031 powder; 25 grs. 5½ turns—35 grs. 7 turns; 50 grs. 11 turns. For 4350 powder, I find 60 grs. requires 13 turns of the crank and 70 grs. needs 15½ crank turns.

Handloaders who can operate powder measures with a uniformity to throw powder charges within a variation tolerance that satisfies them, will have no interest in this powder dispenser and probably have no need for it. But those, like myself, who have learned from experience that they do not operate the conventional powder measures with enough uniformity to **consistently** throw charges as accurately as they wish, may well find the VARCO Powder dispenser a convenient and desirable aid to powder charge weighing.

The dispenser is well made of good material and nicely finished, the bronze base having an attractive black crackle coating. The instrument probably costs about as much to manufacture as the good drum-type measures.



New 3 to 9 power variable riflescope by REALIST, INC.

THE BLUE TRAIL RANGE

Home of: The Conn. State Rifle & Revolver Ass'n. Shooters and families welcome—90 miles from New York World's Fair.
120 covered firing points—25 yds., 50 yds., 100 yds.—lighted.
50 pit operated targets at 200 yds. Shotgun area—Snack Bar—Lounge—Store—Rest Rooms. Send for free 1964 program and brochure.

316 North Branford Rd.
Wallingford, Conn.

REALIST RIFLE SCOPES

A new line of rifle scopes on the market this year are manufactured by REALIST, INC., Menomonee Falls, Wisconsin. While rifle scopes are a new product for the REALIST company, they do have a good number of years experience in the manufacture of precision optical instruments and devices in the photographic and surveying instrument field.

The REALIST line of rifle scopes is quite conventional, including 2½X, 4x and 6x fixed power scopes plus a 3x-9x variable scope for high-power rifles, and inexpensive 4x and 6x scopes for .22 rimfire rifles. The high-power rifle scopes have constant centered reticles; internal elevation and windage adjustment, non-clicking but with graduated dial adjusting knobs and a plainly marked fixed index point.

Since I have become interested in comparing high quality variable power scopes (and like them for my personal use), the REALIST 3x-9x variable was the instrument I had for examination and testing in shooting.

This variable has the feature of reticle which does not change in size as the magnifying power is increased. The crosshairs are adequate in size for easy seeing at the low power and simply cover less of the target area as the target image is enlarged by magnification. This feature seems to be becoming commonplace since REDFIELD introduced it some three years ago, and is the feature which has made variable power scopes acceptable and liked by this shooter.

Optically, the "seeability" with this scope was at least equal to any I have used. The highpower rifle scopes are factory adjusted to be parallax free at 100 yards, and this sample was. I fired several 10-shot strings, changing the power magnification for each shot in the string, and found no significant change in point of impact throughout the full power range.

I did not give the scope any "torture tests" but used it while I had it as I do any of my own scopes. However, the scope appears to be rugged and well made and I would judge this line of scopes to be competitive with any of the high quality U. S. made scopes that I have had any experience with, with choice of makes to be largely a matter of personal preference.

P. H. T.

SAVAGE VARIABLE RIFLE SCOPE

The only specimen of the SAVAGE ARMS line of rifle scopes I have seen and tested has been their 3x-8x variable model. The line includes also a 2½X and two 4X models for high power rifles plus an inexpensive line of 4X, 6X and 3X-7X variable scopes for .22 rimfire rifles.

The scopes I examined were made in Japan, and I presume other models in the line are also of Japanese manufacture, which in itself is no criticism.

The scopes have constant centered reticles and internal elevation and windage adjustments. The reticle crosshairs do not change in size as the magnification power is changed.

On all other variable power scopes I have had experience with the power change ring turns on the stationary eye-piece cell. On this SAVAGE scope the entire eye-piece cell turns to make power changes. This unit turns rather easily and the area is great enough that it could be turned and power setting changed accidentally by rubbing on clothing while carrying in hunting. This is a major objection I would have for this design. To a non-technical person, such as the writer, the optics of the scope seem to be OK.

The scopes are supposed to be factory adjusted to be parallax free at 100 yards. The first scope submitted was not parallax free at any range and permitted a total error of aim of nearly three minutes of angle. Firing strings of shots and making power change between shots gave a point of impact change of over three minutes of angle from low to high power.

A second scope submitted was parallax free at 100 yards and there was no significant point of impact change throughout the full power change range. The possible, even probable, accidental power change by friction on clothing while carrying in hunting is a design feature which, at best, could be a nuisance.

The first scope submitted, with its faults, may have been a very rare specimen, but it does make suspect a possible laxness in quality control by the manufacturer.

However, SAVAGE ARMS is a reliable firm, with probable reliable dealer outlets, who would back up their products and make good on any scopes with real defects.

Except for the 4X Model 0400, which bears a top quality scope price tag, the SAVAGE line of scopes is in the low to medium price range.

P. H. T.

HORNADY ANNOUNCES NEW .30 CALIBER MATCH BULLET

By Creighton Audette

The June/July issue of Precision Shooting carried an ad by Hornady announcing a new .30 caliber match bullet. This is a 190 grain, hollow point boattail bullet with Hornady's secant ogive, spire point. Through the courtesy of Phil Teachout, I was able to obtain 100 bullets for test.

When the bullets arrived, I found them to be of uniform size and weight. The boattail is a bit shorter and steeper than other .30 caliber bullets of this weight, and this, together with the secant ogive, give a cylindrical body section that mikes .3082" and is about .425" long.

One of the things that I always do when examining bullets is to set them up in the milling machine and, using a sharp end mill at high speed, cut half of the bullet away, along the axis. This exposes the lead core and on hollow point bullets, makes it possible to check to see if there was any bleedby of lead during core seating. Bleedby shows up as thin slivers or feathers of lead, extruded up into the hollow point during forming of the point. Since these are generally not uniform around the point they are likely to cause some bullet unbalance. The core seating job on these bullets was excellent, with no trace of bleedby.

Next, using a sharp pointed instrument, I pried the core out of the jacket. The core showed a good bearing in the jacket, and, judging from the difficulty of prying it out, had been very firmly seated during assembly. From the appearance of the cores, I think that they were degreased by boiling in Oakite or some similar solution, as many shooters do in making hand swaged bullets. Many shooters believe that this aids in holding the cores tight in the jackets.

Twenty rounds were loaded up and fired at 300 yards in a bull gun chambered for the .300 Norma cartridge. This gun is regularly used with CCI 250 primers, 72.5 grains of #4831 and 200 grain boattail bullets for long range match shooting. The same loading data was used with the Hornady 190 grain bullets. This rather limited test showed an accuracy potential of better than one minute of angle, so the balance of the bullets were loaded up to try at 1000 yards.

Wind conditions during the 1000 yard stage of the match at the Karner range in Albany (New York) were very poor on Saturday June 25 and it was decided that nothing would be proved by shooting the new bullets. The only good conditions were during the last relay where the shooters had the good fortune to fire at 7:30 P. M. under ideal conditions. That was the relay that I was in the pits!

Sunday, during the iron sight matches, the new Hornady bullets were used. First sighter was a high 3, second was a high 5. In both cases I made what I deemed an adequate correction, but I hadn't established the actual group location and the first record shot was a "wart" 4 at 11 o'clock. The balance of the twenty shot string were all in the black—score 99-14V. The 1000 yard range at Karner is tricky. Wind often fishtails from 10:00 to 2:00 o'clock and changes occur rapidly. This was the case during this string. Elevations held very uniform. The last 19 shots did not use up more than ¾ of the V ring vertically, with the 5's being lost at three and nine on wind changes.

My shooting companion, Jim Gomo, used this rifle and load in the ten shot iron sights match at 1000 yards and scored 50-5V. He remarked on the accuracy of the bullets and the excellent verticals. His 5's were out at three and nine due to wind.

(Continued on Page Five)

COMING MATCHES

(We will list place, date, type and title of match, name of sponsoring organization, name and address of contact person, at a nominal flat rate of $2.00 per insertion, prepaid with insertion order. Insertion orders must reach the Precision SHOOTING office, 64 Depot Street, Lyndonville, Vt., at least 45 days before date of match for single insertion orders. For multiple insertions, 30 days additional must be allowed for each additional insertion desired.)

MURRYSVILLE, PA.: September 26 and 27; Pennsylvania State Free Rifle Championship; 50 meter three-position. Murrysville Rifle Club, William R. Funk, 3336 Sardis Road, Murrysville, Pa.

SET-OVER METALLIC SIGHTS

By Jesse M. Grigg

For certain reasons some match competitors find themselves badly handicapped when they do metallic sight shooting with the right eye. The right may not be the master eye, or it just may not be as keen for shooting as the left. I name the latter possibility with the authenticity of experience; for I have been shooting right-handed with the left eye, using set-over sights, for about twelve years.

As to nature of the impairment which I have in mind, all eyes are said to have small, opaque specks floating around in them. The degree of this fault perhaps depends on the individual, and maybe on age. In my own case I believe the fault has existed since boyhood, for I have always had what, for lack of a better name, I call dark blindness. I need a flashlight to find in dark corners what others find without. I am among the first on the line to fall down when the light gets bad.

In the general case these floating particles do not hinder anyone's vision in normal use when the light is good. For normal use in good light the pupil admits enough of it regardless of particles. However, our eyes are not intended for peeping through keyholes and rear apertures. So, when the cone of light admittance is restricted to an aperture of maybe only .040" diameter, the retinal image is dimmed from daylight into twilight. If also there exists the handicap of too many floating specks, then almost the darkness of night descends before the blurring is overcome by reducing aperture diameter. In this event one must then compromise between a larger aperture and a fuzzy sight picture to get enough light for even poor shooting.

If this condition exists and the difference between eyes is sufficiently marked to warrant shooting with the other eye, possibly the shooter is already aware of it. If not aware he may discover and appraise the fault by simple experiment. The latter consists only of looking through apertures of different diameters at different distances from the eye while the pattern of clouding and also the relative brightness of the field are being studied. A terrestial background rather than sky is more favorable as darkness accentuates the fault. For aperture, round holes punched in paper, or your shooting eyepiece will do; and, if the latter is an iris or 6-hole, the test will be more instructive. Also it will be comparative if your ordinary glasses are worn in observation.

As to theory first is stated that the field seen through a small aperture is dim for two reasons. One is the insufficiency of light admitted by the aperture itself. The other, as mentioned above, is the presence in the eye of floating specks which further obstruct what little of light gets through.

Now starting with a small aperture hold it close, first to one eye then the other, and peer through. If the aperture is not too small, the field, though noticeably dim, is uniformly so all over excepting a faint, gray disc in the center. However, if the aperture really is too small for your eyes, irregular clouds will be observed. If they are black clouds, occupying much of the field, this aperture is too small for any shooting use, whether or not the eye contains specks.

If there is not much clouding or even not any when the aperture is close to the eye, observe now the effect of slowly moving the aperture away to a distance of 8 or 10 inches. Even if the field was not clouded at the start, and even though your eyes be normal, clouds will have gradually formed, these thin and much diffused at first, but steadily shrinking in size and gaining in blackness with distance of the aperture. Possibly at several inches of aperture distance an aiming bull might not be distinguished from a cloud.

Now repeat the experiment with a larger aperture. You will find the clouds to be less dense because their substance is spread over a larger field. In fact it is diluted in proportion to the size of the field which in turn is proportional to the square of the aperture diameter.

The cause of this clouding is not, as one might suppose, obstruction of light by specks in the eyeball. Instead, the clouds are the blurred and overlapped images of the inside aperture diaphragm edge after they have been distorted by eye imperfection. Proof of this is had in several ways. If the aperture is a hole in colored paper the clouds tend to have its color—for instance black for black paper, gray for white. Further, if the eye is focused on the aperture ring itself (for example with bi-focal glasses) the field is cloudless. Still further, shape of the aperture and sometimes such faults as astigmatism, may be detected in the pattern of the clouding. Moreover, that eye imperfection cuts a figure is evinced by fact that the pattern of clouding seen today may not be the one seen tomorrow. Finally, these proofs lead to conclusion that the effect of eye particles is only that of obstructing light, which effect does not occur at all unless the total of pupil area is diminished by an aperture diaphragm in front of it.

All this may be summed in a few simple principles. In shooting the proper position of the aperture is as close to the eye as mechanical limitations will permit. The proper size of the aperture is a mean between two extremes. If it is too large the front sight and bull will appear blurred. If it is too small, clouding will be excessive and the field too dark. Blurring is cleared by use of a smaller aperture; but as dimness increases faster than clearness, in general it will be necessary to accept some degree of dimness. So, if there are too many specks in the eye, the field will be too dim for close aiming.

If now you continue the test, holding differently sized apertures as close as would be possible in shooting, you will find a certain one at which the acceptable limit of clouding and dimming occurs. Do this with the other eye and compare results, noting particularly the relative brightness and definition of field at a few inches from the eye. If the difference is sufficient to warrant change of shooting eye, perhaps you will be able to know at a glance that to shoot with the other eye would be much to your advantage.

In my own experience this discovery came quite by accident when for no reason other than convenience I chanced to run my left eye along the sight line. What I saw compared with what I was used to seeing was as sunlight compared with moonlight. That instant the die was cast. Now, though I still use the right eye for scope, I have no desire to go back to that eye for iron. The left has advantages which I never knew with the right. For instance I do not have the birdge of my nose and an eyebrow just where I want to look, and I can aim in a manner which is very nearly natural.

You may ask now, How does one come by a pair of set-over sights? I wish I could refer you to Redfield, Parker-Hale, or Lyman. As to commercial product I can say only that the Stoeger catalog lists a set by Anschutz for Anschutz rifles, but I cannot recommend it. According to the picture whoever was responsible for it never tried to shoot with it. That feat would require a neck with more rubber in it than mine has got. The sighting plane appears to be about an inch too low, a fault which I believe could not be overcome satisfactorily by restocking; another inch of dog might cause excessive jump.

So, excepting the Anschutz, attainment of set-over sight ownership seems to be either a do-it-yourself or hire-it-done job. I have built two sets, also set-over brackets for tube sight, but I cannot tell you just how it was done. I used hand tools and such odds and ends of material as could be found. However, I shall supply a description, some rules, and vital dimensions.

First of all, the rear aperture itself should be in exactly the right place. For geometrical reasons the proper set-over distance is not necessarily the distance between pupils. So to find the right place I bent an eye or loop in a length of small wire, attached the other end to the right-eye sight, got down into the prone, then bent the wire so that I could look through the loop in normal position without strain. By measurement I learned that for me the aperture should be about 2 5/16" to the left of the right-eye aperture and about one inch higher—higher because the cheek rests on the stock at considerable angle. For other shooters also, perhaps these dimensions are nearly correct. If not so, cutting down or building up the cheek piece should overcome the difficulty.

Now suppose that existing sights are to be retained and set over by means of adapters. Obviously an adapter which is illustrated in Fig. 2 will move the rear sight over 2 5/16" if the distance between the outside vertical faces is that dimension. One side of the adapter of course will be formed to fit the existing base, the other formed to accept the rear sight. Similarly, if the difference in height between corresponding screw holes on opposite sides is one inch the set-over aperture will stand that much higher than it was before.

In the front sight set-over arm which is illustrated in Fig. 1, the vital horizontal and vertical dimensions both are slightly less than the corresponding ones at the rear. The reason for this is that the sight line and trajectory must meet at the point of aim, just as they do in right-eye shooting. So, with the 50 yard zero assumed to be the basic one, to make these lines meet the horizontal angle between them must be nearly 5 minutes, this requiring that the distance between sight-block centers be almost 1/16" less than the corresponding 2 5/16" at the rear. Also to allow for the sum of jump, drop of the bullet, and height of the front sight above bore, the level of the front sight aperture should be about ⅛" lower than the level of the rear sight aperture. If with these allowances the impact point cannot be zeroed in, a sight block of different height may be substituted to change the elevation, and the windage may be changed by drilling and tapping new holes, these staggered with respect to the old ones.

Making the dovetail block for the front-sight arm calls for both skill and understanding whether it is made by hand or machine. Perhaps one would be ahead in both expense and labor by cutting off and using the dovetail part of a detachable globe front sight of a type such as both Redfield and Lyman list at $5.00. Otherwise is required an 8-40 tap to obtain which I had to go to a machinist supply. As to manner of attaching to the arm, I secured the dovetail block with solder plus two rivets and at the other end used solder plus the regular 6-48 screws. For riveting, both in the front- and rear-sight assemblies, I used the shanks of 8-32 machine screws in holes tapped to receive them, sawed off the heads, and pened both ends, this permitting a flush finish. Large holes drilled at convenient places in the bar reduced the weight.

For the rear my first adapter was only a piece of light channel iron bent into a U, this device being soon abandoned because of its frailty and insecurity. The nucleus of the next model was angle iron with flanges lapped to provide the desired width. Solder and threaded rivets made the joint secure. As the thickness of the angles was scanty, instead of gashing, I attached ribs to build up the sections to

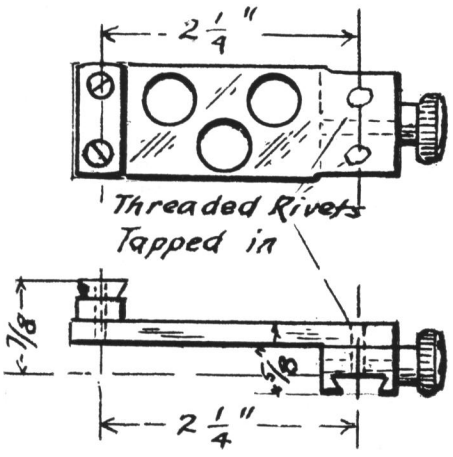


FIG. 1

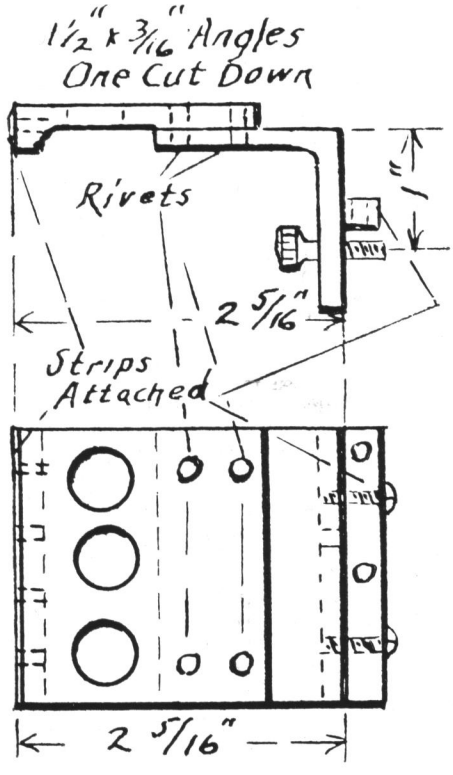


FIG. 2

match their opposites where the surfaces adjoined at base and sight frame. For constancy I provided an extra attaching screw at the base and another extra one at the sight.

Thus I built for a lifetime. But after several years as a satisfied user I found at Camp Perry in Roy Dunlap's gun store just what the doctor ordered for a set-over rear sight. It was a Parker-Hale (no number on it) whose horizontal limb could be turned to the left instead of the right. The receptacle for the eyepiece was then not in the right place, but that little difficulty was easily surmounted by sweating to the existing limb a suitably drilled and tapped strip.

That P-H, still in use, is without doubt the best rear sight I ever owned. Beside permitting a quick change of two and one-half inches in the eye relief, it is still tight in every movable part. Moreover, if ever need arises, it could be easily tightened because the slides move on beveled rails like those of a lathe. I like it so much that I made an additional base for use on my standby rifle.

In the use of set-over sights each different range calls for a different windage as well as a different elevation. To go from 50 yards to 100 yards requires about 2.5 minutes of movement to the right; change from 50 yards to 50 feet calls for about 5.5 minutes movement to the left.

The error associated with cant is very little different from that with other sights. As in the case of the latter, the sight line and the trajectory normally meet at the point of aim; so, were the trajectory a straight line, no error would occur. In reality, with either mode of sighting, error does occur because the drop of the bullet requires the rear sight to be higher than the front. The amount of error depends on the difference between heights, which is about the same in either mode of sighting. However, a front-sight spirit level is strongly recommended for the advantage that it has in compensating, by means of intentional cant, for up to about 10 miles per hour change of wind velocity.

Excepting the fact that commercial adapters are not generally available, aiming with set-over sights is eminently practicable for those whose right eye is not suitable for metallic sights. Compared with a system of mirrors, the set-over method does not have the fault of increasing the eye distance from the aperture by an amount equal to the distance between pupils as the mirror system does.

Finally it is repeated for emphasis that the set-over aperture should stand much higher than a right-eye aperture. I know of a case in which the set-over arrangement was quite unsatisfactory because this additional height was not provided.

New Hornady Bullet

(Continued from Page Three)

There was one relay yet to fire when we left for home, but the score board and scores checked along the line indicated that the new Hornady bullets had won the two matches in which they were tried. Hornady's ad says, "meant for COMPETITION—made for WINNING." **They are!**

I am glad to see another of our commercial bullet makers enter the .30 caliber match bullet field. Competition is a good thing and generally benefits the consumer. With their longer body diameter these new Hornady bullets should show an accuracy improvement in rifles where the throat is worn or slightly oversize. It is anticipated that Hornady will announce a 168 grain, .30 caliber, hollow point, boat-tail match bullet soon.

(Editor's note: The availability of the new 168 grain match bullet is announced in the Hornady advertisement in this issue.)

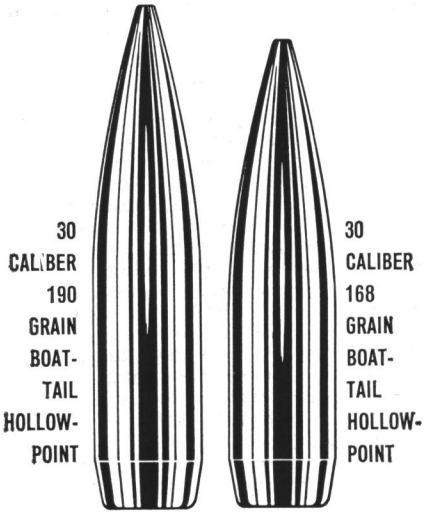
MEASURING VERSUS WEIGHING
By Joseph H. Rappeport, M.D.
Longview, Texas

In regards to the current furor about weighing and measuring everything, I would like to report this to you.

I have available and analytical balance which is capable of weighing to plus or minus .05mg. Using this scale, I have weighed cases, bullets and powder. Case weight varied less than 1/20 of a grain, bullets varied less than 1/20 of a grain and the powder was measured to the nearest .05mg. Shooting these in my 222, 40X heavy varmint rifle and my 6X47, 40X heavy varmint rifle, I was unable to consistently shoot groups which were smaller than the average run-of-the-mill groups that I had been shooting prior to the undertaking of this experiment. In fact, my smallest group which measured .190", shot with the 222, was shot with bullets not weighed, powder thrown with a measure and cases just picked up out of the box.

It seems to me that the thing that we really need is some machine or gadget for measuring the element, a device that would tell us that such and such a day would be a good day for us to go out and shoot. **Wouldn't this be grand?**

NOT ONE...
BUT 2 NEW
HORNADY
MATCH
BULLETS



meant for COMPETITION
made for WINNING

If you compete to win, you'll want to try these new Hornady Match Bullets in your rifle soon.

Over two years in the making, they offer competitive shooters a new level of ballistic efficiency for accuracy at long range.

Both weights have a long secant ogive spire point and a boat tail base for flat streamlined flight.

Both have a long straight bearing surface, a critical factor in achieving the best accuracy in most rifles.

All our tests—and we've made hundreds—indicate winners. Accuracy is superb—the result of great design plus meticulous care in manufacture. Hornady Match Bullets are the most carefully made, thoroughly inspected, and continuously tested bullets available. Try them soon. At your dealer's—

$6.00 per 100

Bullets for handloading—send for list

Hornady BULLETS

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GREATER PRECISION IN PRONE SHOOTING VIA GRATER THEORIES

Part II

By Betty Summerall Duncan

***

"Iron sight mastery is the true key to championship shooting," according to WILLIAM J. GRATER. After placing third at Bisley a year ago and in the light of his recent performance at the combined Western Nationals and California State Championships, Bill is particularly qualified to speak on metallic sight shooting. A point of interest—: the tightest groups which he has ever recorded have been fired with metallic sights. "In the last two years," Bill reveals, "I have learned more about iron sight shooting than I ever thought possible."

You may be sure that the type of sights and accessories which he uses were selected for a logical reason. Those components consist of the Bell front sight, Redfield Int'l rear, Redfield X-tube, and Barrett rear iris, plus Junker shooting glasses, which he purchased in Switzerland.

Grater believes, "A shooter should use some type of front sight in which the elevation change from short range to long range is incorporated in the sight itself. This insures the same cheeking pressure regardless of distance. Therein lies one of the most important factors in firing a good iron sight score. My rear sight has ¼ minute clicks, but I use one with ⅛ clicks for shooting Int'l targets. On the American target, the use of ⅛ minute adjustment is not warranted with the size of the scoring ring used. It also must be pointed out that I do not click for windage adjustment. I hold off. I hold off no farther than the middle of the 9-ring. If it requires a greater correction than this, I adjust my sight to compensate, or I stop shooting until the original zero returns, depending upon the situation involved. I do believe that you have to have the best rear sight available, because you cannot trust any movement in the mechanics of the adjustment. I plan to use in the future a handmade sight by Karl Kenyon to insure this quality of assurance."

Possibly the query most often heard is, "What size aperture should I use?" Bill offers some tangible assistance on this universal problem. He has observed, "Most shooters tend to have a bad habit in trying to adapt to the one who is winning. What works for him may never work for someone else. Use of the **proper aperture** fatigues the eye less and gives a good sight picture of both bull and front aperture. In deciding upon a method for selecting the correct aperture, I have experimented and kept notes, which I compared with another top shooter, George Stidworthy, and we have both verified the results. I use a series of apertures which are different for short and long range and for varied light conditions. The variable of light is the most important factor in seeing what you are aiming at, properly. I use a Norwood Director light meter, and have divided the scale into 3 major areas—dull, medium, and bright. If I am shooting at 50-yds. and I am on the bright scale, I use a .115 front aperture. If I am on the same scale and shooting 100-yds., I increase the size of the aperture to .120. Thus, I use 3 different apertures of .005 increments, but .005 larger to start with, at 100-yds. If the light meter should go from bright, while I am shooting at 100-yds. with a .120, to dull and overcast and registered on the low part of the scale of the light meter, I would then place a .130 size aperture in to shoot that string. If I am between two points on the scale, I always select the larger aperture rather than the smaller, because it definitely is a disadvantage to have too small a front aperture. Experience shows that when you have too small a front aperture, there is a tendency to shoot very tight groups and then throw a wide one. This is because you are not seeing properly what you are aiming at. My vision is uncorrected 20/20. My sight radius is approximately 2-inches longer than average, so it may appear that I am shooting a slightly large front aperture. In reality, if I were to shoot a standard sight radius, I would be between .010 and .020 smaller."

Determining the proper-sized front aperture requires patience. Bill outlines the method by which he considers that it is best accomplised. "The black ring of the front aperture should not be too big nor too small. The width of the black ring, as you look through your sights, should be ½ the diameter of the black bull at which you are looking. This facilitates the eye to record the picture of the aperture and the bull quickly. If you have a small black ring with a large black bull in it, your eye tends to focus more on the bull than the ring, and vice versa. Thus, the easier the eye can focus to the two objects, the less fatigue and the quicker the impulse to the brain.

"The next part of the sight picture is the amount of white between the edge of the bull and the edge of the ring. This, I find, is easy to decide upon by firing at short range in perfectly calm conditions and, upon establishing a zero, shading the front sight so that the edge of the bull barely touches the inside edge of the ring with a very slight amount of white showing through so as to insure not being completely into the black area of the bull. The bullet should hit the 9-line or the middle of the 8-ring. Once you have established this and have recorded the light with the light meter, you have a basis for selecting aperture sizes for corresponding ranges and conditions.

"It is important that you have the proper aperture for the particular light condition, but it is always safe to have a little too large an aperture than too small. This may be where some shooters experience a change of point of impact with a sudden light change. First of all, they should not shoot when this sudden light change takes place. If it continues, they should readjust their rear aperture. I use an English-made Barrett type iris, which has a lever that operates like a camera shutter. I bring the shutter closed until it starts to gray, then slightly back off. If the light conditions change, I immediately readjust. I experience no point of impact change when I go through this operation. The Barrett iris has a number of polaroid filters of different colors. I find that you should not use these due to the fact that they pick up dirt, and they deteriorate after a short period of time. Consequently, although I need no correction, I use Junker shooting glasses, which are custom fit, to accommodate the proper contrast needed. There are 5 lenses which I use to accomplish the desired contrast. They are bright yellow, light yellow, pink, light smoke brown, and medium smoke brown. The yellow lenses are used for overcast days; the brown smoke lenses, for bright sunny days. The pink lens is used only late in the day when there is a tendency toward diminishing light. Selection of the proper lens must take place at the start of each string. By holding the different lenses to the eye and comparing the blackness of the bull, and in anticipation of how long the current light conditions will hold, you make the proper selection."

Bill uses no colored apertures; his front aperture is lucite. He utilizes a system of tubes for changing apertures.

As previously mentioned, he uses the X-tube, and explains, "The use of a tube sight of a short, open type is a definite advantage to a good sight picture if used properly. I find that the long, small type tube sight tends to fatigue the eye and give results of alternating tight groups and wild shots. The use of a tube sight of the Redfield type can be of great aid if the amount of white around the hood of the front sight should be enough so as to identify an object if you concentrated on that particular area. Most shooters adjust it so that there is a halo light or fuzziness around the hood, or down to the point where only the aperture is what they see. This is where they meet their Waterloo. The tube sight enables you to get a sharper ring on the aperture and a sharper bull plus insuring an exact same location on the cheekpiece. If you make a correction of over 10 clicks, you should readjust the centering of the tube sight.

"Contrary to most Int'l thoughts upon distance from rear sight to eye, I feel that the shorter the distance from the rear aperture to the eye, the less the error. If you were to be 5 inches from your rear aperture, any slight movement would be multiplied. You do not want to touch or ride the sight with your eyebrow or your shooting glasses. If you wear glasses, there should be at least ⅛ inch between the protective cover of the rear aperture and the front of the lens. You should never come in contact with the rear aperture.

"While on the subject of glasses, I do not use them for shooting scope. But, in order to keep from fatiguing my eyes while I'm shooting, to keep the sun directly off, I wear a hat. At any time when I am not shooting, I wear a pair of dark green glasses. A person must be careful of strain. A short trip to the target and back without dark glasses on is enough to strain the eyes and lose enough sharpness to cost you the tournament. When you are resting between relays, try and stay out of the sun, and continue to wear your glasses. Another secret of eye care is in recognizing the fact that when you awaken in the morning, you are not focusing as sharply as later on in the day. I think that while you sleep, your eyes retain a protective covering and when you awaken, you wash them, but it still takes a period of time before they function properly. Before I start shooting, I use an eye solution so as to lubricate the eyes, decrease soreness, and enable them to adapt to the glare and still be wide open."

Bills' National Junior Metallic Sight Agg. Record of 1600-109X still stands. With scope, his 3195-272X Junior Record in the 320-shot Any Sight Agg., remains unbeaten even though it has been 8 years since Bill fired as a junior. His string of 1600 possibles numbers 9¾. (In Dallas in April 1963, he was clean going into the last match, the 50-yd., when the match was called due to an untimely tornado.)

As with all phases of our sport, Grater has definite ideas on **scope shooting.** To preface them, he says, "I feel that scope shooting, much to the amazement of many shooters, can be a little of a handicap to the top shooter. There is more routine and assuredness in shooting iron sights than there is in scope, plus—most shooters have a tendency to take chances with a scope in it. The focusing of the scope is done to 20X Lyman scope with standard crosshairs because they see what is going on. I use a give a sharp picture on a good day, and if there is no mirage, I turn the scope slightly out of focus (bringing it closer to the shooter from the target). In most cases, with the amount of mirage in the locale in which I shoot, 20 power is more than adequate to cope with the conditions. I do believe that a variable power scope would be the ultimate to get the desired amount of holding capability and mirage needed for each type of condition. But, I feel that if not properly used, a shooter would have a tendency to do more adjusting than working on accomplishing a solution to his own problem.

"In deciding on the degree of scope magnification, there are several variables involved. I personally can hold on a bullet hole at 100-yds. At that time when I cannot, psychologically, my scores aren't as

good. But, this is one of the biggest misconceptions of scope shooting. Some people have tension, or jitters, with a scope to the point that they cannot hold steady. I have found if they go about it with the right mental attitude, their groups will be as tight as normal. If there is a wobble in their holding, they should center the average of the wobble in the general direction that they wish to hold the shot. If done consistently, without any hesitation (as to how you feel psychologically), it will hit the point of impact you desire. There are some who have a definite pulse rate and, accordingly, they have to pick a certain point in that curve to let the shot off. It seems to take the shape of a U-shaped crescent. You should only let the shot off when the crosshairs settle at the extreme bottom of the U-shaped crescent.

"There is one other trick to getting results with a scope. If the mirage is very bad and you are having a tendency to follow a group that is off center, instead of the desired point of impact, you should resight in so as to align the 10-ring on both sides with a quartering of the crosshairs. In other words, if you were to take the upper left hand quarter of your scope, you would rest the bottom of the crosshair across the edge of the 10-line at 6 o'clock and the perpendicular crosshair along the edge of the 10-line at 3 o'clock. In essence, you have somewhat turned your scope into an iron sight without losing the ability to see the changes in the condition."

Many of you will recall the debate which we featured in March 1963 between former National Champs Pres Kendall and Vic Auer. One point under discussion was the subject of rifle scopes. Apropos of the remarks at that time, Grater commented: "I can understand why Pres uses a 15X scope and also a Lee dot. In the soupy mirage they have in his section of the country, a higher-powered scope could pick up conflicting mirage currents, while a 15X would more clearly show the predominant mirage. In that type of mirage, when it is difficult to spot shots and to see the crosshairs clearly, a dot could be an advantage. I believe that the locale determines the power of scope which is preferable."

(Concluded in September)

1,000 YARD RECORD SCORE WITH .30-'06

George Pratt of Pownal, Vermont, perenially one of the top riflemen in the Northeast, hung up a new 1,000 yard record score at Karner Range, Albany County, New York on June 27, 1964 in the Capt. William Dale O'Brien Detachment U. S. Marine Corps League Second Annual All-Range Registered Tournament with a .30-'06. He cleaned it V clean in the ten shot unrestricted rifle any sight match and tagged an extra V, thereby topping by a single V the previous best score by a civilian under the same match conditions. The N. R. A. has the score under consideration for acceptance as an official record.

He continued red hot to post a 16V possible in the 20 shot 1,000 yard unrestricted rifle any sight match fired in the same relay, which equalled Creighton Audette's ten year old range record and cinched the Capt. William Dale O'Brien Trophy.

George's comment on the load and equipment used is:

"The load I used was with FA 59 match brass, CCIM primers, 49 grains of 4064 and the 190 grain Sierra Match King seated to not quite touch the lands.

"My M-70 is a .30-'06 standard bull gun with glass bedding in recoil area and the first 3" of barrel. I would guess its 28" barrel gave that load around 2700 F. P. S.

"My scope is a 1½" Unertl 20x."

Dermot C. Reilly

TOURNAMENT CIRCUIT

MODESTO, CALIFORNIA

The Modesto Rifle Club was host to the 4th Annual Palma Match on May 17, 1964. Seven teams were entered, making up a total of 50 shooters. The Modesto Junior Rifle Club made up the pit detachment and should receive a vote of thanks.

The course of fire for the Palma Match is 15 shots at each 150 yards, 175 yards and 200 yards, using the C-5 Target (one-fifth reduction of the Army C target) with the 22 long rifle.

Bud Wickersham from the Padre Rifle Club was the high individual winner with a 223-33, the possible being 225-45V. Bud used a Winchester 52, Tillington barrel (?—might be Titherington—PHT), Mark-III ammo, and a Lyman Super telescope.

The winning team was the Olympic Club from San Francisco with a total of 1107-154V. The team members were Arlin Ameral 223-30V, Robert Ribak 222-30V, Gerald Malony 220-33V, Paul Livingston 221-31V, and Manuel Felciano 221-30V.

Second place team was the Padre Rifle Club from San Jose with 1097-145V. Team members were Bud Wickersham 223-33V, Warren Winovich 223-31V, Pete Kuri 218-27V, W. E. Espersen 217-29V and D. Bowman 216-25V. Modesto Rifle Club #1 team was third with 1085-133V.

Harold Ghaner

William Schlitzkus, Springfield, Ore., 1964 Oregon State prone smallbore rifle champions with trophies he won.

OREGON SMALLBORE CHAMPIONSHIP

F. W. "Bill" Schlitzkus, Springfield, Oregon, decisively defeated 28 other shooters to win the Oregon State Smallbore Outdoor Prone Championship June 20-21 at McKenize Bridge, Oregon. The pattern of things to come was clearly demonstrated in the first match, the 100 yard metallic, which Schlitzkus won with 400-32. After winning the next three, also, Bill posted a 1600-123x iron sight aggregate, the only 1600 with iron ever fired in Oregon. And if this performance was not enough, Bill fired an additional 400-32 in the NRA state team postal match, shot as soon as the iron aggregates were posted, giving him a spectacular iron sight total of 2000-155x for the day. According to Charles O. Bowles, who scored all Bill's targets except the team match, not a single shot had to be plugged to see if it made a 10.

(Continued on Page Sixteen)

olympic selection

Anschutz dominates international smallbore matches

At the 1963 European Championships in Oslo, 31 of 48 competitors in the 3-position match—and 9 of 12 winners—shot an Anschutz. The Match 54 has walked off with a major share of the honors at Sao Paulo, Cairo, Moscow—at every recent international match.

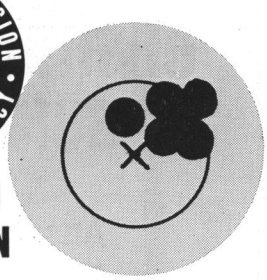
The reason is obvious; famous Anschutz precision, unparalleled accuracy that means higher scores. The Match 54 action is satin-smooth, with a fully adjustable trigger and hand-lapped barrel. Model 1413, illustrated, with international type stock, weight 15½ lbs. **$275** (sights extra; with left-hand stock, $287).

Model 1411, not shown, is the same superlative Match 54 action in a U.S. match-type stock. Weight 11 lbs. $145 (sights extra; left-hand stock, $157).

Prices subject to change. For free full-color catalog, write Savage Arms, Westfield, 51, Massachusetts.

Savage ANSCHÜTZ

REDFIELD PRECISION MEANS ACCURACY



REDFIELD PRECISION MEANS

ACCURACY!

For over half a century, the Redfield reputation for fine quality sighting equipment has been unexcelled. Redfield is proud of its position of leadership, and pledges to continue to manufacture the very finest sights available *anywhere.*

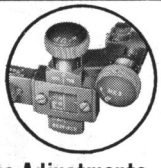
International Match

1st Choice of Master Grade Riflemen

The Redfield International, the result of years of experimenting, gives top grade riflemen the ultimate in precision, accuracy of adjustment, and dependability. Uniform quarter-minute adjustment is assured. Direction of adjustment can be reversed without slack or lost motion. Fits same base as Redfield Olympic sights.

International with standard base and ⅞" Disc $32.55
International with standard base and Sure-X Disc. $39.75
Sight less base, deduct $2.75 from above prices.

The Ultimate in Fine Rifle Sights



INTERNATIONAL MARK 8 With ⅛ Minute Adjustments

Super-accurate ⅛ minute adjustments is the perfect answer for shooters wanting finer than the customary ¼ minute adjustment. Has the same inner knob tension springs, the same precise construction and ruggedness for absolute freedom from loosening or backlash as International Match. Being used by several top military teams.

International Mark 8, Std. Base, ⅞" Disc. $39.75
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INTERNATIONAL MATCH SMALLBORE FRONT

Precisioneered of lightweight alloy. Fifty yard front is .054 higher, saving 26 ¼-minute clicks when changing from 100 to 50 yards. Specify 100 yd. or 50 yd. front. With base and insert set $13.95

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For .30 caliber, tube shortened to 1.9", eyepiece same size as tube. With base and insert set $13.95
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41 MAGNUM RELOADS

By Kent Bellah

S & W's .41 Magnum, Model 57, is their "N" frame target grade revolver identical to their superb .44 Magnum, except in caliber. A .44, actually, a .43 will fire .41 ammo, so don't get it mixed. Remington makes two loads with 210 gr. bullets. The Lo-V lead is listed at 986 fps in a 6" revolver. The Hi-V Soft Point is listed at 1342 fps for 836 FP muzzle energy. It about equals the higher velocity Remington .357 Magnum S. P. at 1550 fps for 845 FP. This is the most potent .357 factory cartridge ever made.

Remington chronographed the new .41 in revolvers. Formerly, ammo makers used unvented test barrels that registered higher velocity with no gas leak between the cylinder and barrel. The loss is much greater in Hi-V small bores than in Lo-V big bores. For example, S & W listed the .22 Jet at a whooping 2406 fps. The figure was correct in a test barrel. Our 6" revolver registered only 1806 fps. Many .22 Jet owners have been most unhappy.

The Hi-V .41 load is correctly listed at 1600 fps in a test barrel, 1500 fps in a 8⅜" revolver, and 1342 fps in a 6" revolver. Instrumental velocity in our 6" revolver is 1399 fps for 10 rounds. Different guns, or cartridges in the same box, will give more variation, so our figures are also "correct."

Wildcatters had nearly similar cartridges 40 years ago. "Pop" Eimer made the .401 Eimer in 1922 on a 1.250 length of a .401 WSL case. Colt wouldn't produce the guns, believing the caliber served no particular need. It was improved with the introduction of 2400 powder in 1932. We had two of the guns several years ago. Loads were inferior to .44 Special reloads. A .401 Boser was similar. Fred Clay, Panama Gun Works, designed the best, a .403 Clay on a 1.270 .30-30 case in 1959.

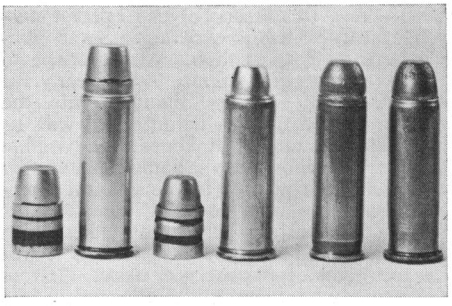
In 1952 I suggested Jim Harvey commercially produce my idea in a .40-41 wildcat. Jim couldn't see any profit in something that wouldn't equal ballistics of .44 Special reloads. Perhaps he was right. But some people want anything that's new, even if it's inferior to available products.

In 1955 I told Colt's I could make a .40-41 superior ballistically to the Eimer. They offered to make a specification gun, but were not interested in commercial production. I thanked them and dropped the project. Why spend my time and money on something that woludn't be available to shooters? I hated to see the 90 year old .38-40 die. It deserved to be modernized. I had written about a .40-41 in this magazine, and others, and advertised for wildcatters of more potent cartridges than the Eimer to write me. Over 20 letters indicated some interest in the caliber.

Our .401 Eimer and .403 Clay loads shoot pretty well in a .41 Magnum. The .41 won't quite chamber in either wildcat.

Herter's said they finalized a .401 Herter Magnum in 1961. Dimensions indicate it can be fired in a S & W .41, as it's quite similar to this and the ancient wildcats. They list .401 Herter Magnum revolvers at only $41.95. the same as their .357 and .44 Magnums. They claim their Magnums are made of the finest German steel, hand polished, hand lapped, hand blued, and hand fitted by German craftsmen. The 5-shot cylinders eliminate deep bolt cuts in the chamber walls. Guns are guaranteed superior to any $140 American revolvers, or return them after 2 weeks trial for a full refund plus transportation both ways.

Herter's catalog claims are strong. I doubt the firm is modest to a fault in praising their products. There is not apt to be anything miraculous about the .401 Herter Magnum, or any other cartridge with ballistics handloaders and the factories have equalled or exceeded for many years. The



Bellah's H & G Mag. copy of 1908 Heath bullet and load; Lyman bullet and load; .401 Eimer load; .403 Clay load. (Photo by Kent Bellah)

41 Magnum bullets. Left, Bellah's H & G copy of 1908 Heath design; Rem. soft point; C-H home swaged half-jacketed. (Photo by Kent Bellah)

.41 Magnum is potent, but greatly inferior to a .44 Magnum. Neither gun is for a novice, or anyone who shoots less than several thousand rounds a year. If you can't hit accurately with a .38 Special or .357 Magnum, you'll do worse with a .41 or .44 Magnum.

A well placed hit with the easier-to-shoot .38 Special is far more deadly on man or beast than a sloppy hit or a miss with the most potent Magnum. A .357 is adequate for deer or black bear at any range you can accurately hit in a 10" circle, and it has bagged much larger game. S & W list the accurate range of a .38 Special Hi-Speed at 500 yards, and a .357 at 600 yards. Few shooters can hit accurately at one fourth this range.

Herter's claim to have developed a .401 Herter Magnum rimless cartridge for automatic pistols. We haven't seen any of their guns or ammunition, but we have some promised. Ruger will chamber their excellent revolvers for .41 Magnum cartridges.

Hensley & Gibbs, 2692 E St., San Diego 2, Calif., made us a superb 4-cavity custom mould for 210 gr. .410 semi-wadcutters. It isn't my design, but a copy of the C. E. Heath 1908 design. Heath was honored after his death by having his long range target and hunting design copied by many people, with some claiming the design as their own. Most Heath copies are modified, as mine is, by changing the top grease groove to a crimp groove. My copy is good, quite similar to the 1938 Boser copy for the .38-40 and .401 wildcats. Ray Thompson's design is not a true copy, as it has a gas check base, and his .38-357 has a top crimp groove for .357 cases and a bottom crimp groove for .38 Specials.

No firm makes better moulds than H & G. James Gibbs, and his son Wayne, won't let an imperfect mould out of the shop. That's rare in these days of sloppy quality control in so many name brand products. H & G made us .410 dies for a Lyman sizer.

All castings were 2 parts Illinois Bullet Alloy #4 and one part IBA #7. Hardness on our lead tester is equivalent to 1:15 tin-lead, but bore leading is less due to the composition. RCBS loading dies worked perfectly. A heavy crimp is used to hold bullets with heavy recoiling loads. CCI 350 Magnum primers were used in all loads. They are specified and recommended.

A maximum load that equals the Hi-V factory round is 20.5 grs. 2400. Instrumental velocity is 1394 fps for 906 FP energy. Maximum deviation for 10 rounds was 67 fps. We proof fired 22.5 grs., which is not a shooting charge and should not be fired. Best charge is 19.5 grs. 2400, hot enough with cast bullets. It about equals Remington's .357 S. P. load on varmints, although trajectory is not as flat. I much prefer a .357 for varmint hunting.

The best AL-8 load we tested was 16.5 grs. for 1308 fps and 797 FP energy. Accuracy didn't quite equal 2400, probably due to 128 fps variation.

All accuracy testing was with a Weaver K-4 glass in a Buehler mount, a custom job I had Maynard Buehler make in 1958. After I wrote about it in this magazine, and others, Maynard was swamped with orders he couldn't fill. He tooled up pronto and added it to his excellent line. Maynard and I had long used scopes on handguns. This mount started the current popularity of scopes on handguns.

Most accurate cast load was 8.5 grs. Unique. Instrumental velocity is 1108 fps for 569 FP energy, adequate for deer size game. Maximum deviation is only 16 fps! Accuracy is good beyond 100 yards. 10.0 grs. also shoots well, with more power.

C-H makes .410 bullet swaging dies for their most excellent Swag-O-Matic press, and dies to draw .44 caliber jockets to .405. They make excellent bullets with .38 caliber IBA pure lead wire. For half-jacketed bullets we highly favor minimum lead exposure on the bearing surface. We used Speer half-jackets, settling on 175 gr. bullets as best. Backed with 21.5 grs. 2400 instrumental velocity is a whooping 1521 fps for 898 FP energy. Velocity spread is only 36 fps, best with any Hi-V load tested, and well within target grade ammo specs. This load isn't flat out, but accuracy is better than with top charges. The soft lead causes terrific tissue destruction. It's even more violent with bullet noses drilled with a Forster-Appelt Hollow Point Accessory I designed for their excellent case trimmer. Adjust the ⅛" drill for a ¼" deep cavity, using the Universal sleeve that works with all calibers. These bullets are not designed for low velocity. Drive 'em fast and they go after meat like a hungry wolf, then clobber the wolf! Recoil is so mild you can use these loads for plinking without discomfort.

ANALYSIS OF BULLET METAL

A. J. Hammer, E. B. A.

In the March '64 issue of Precision Shooting, a letter was published in which a spectrographic analysis of wheel weight alloy was mentioned. The results of the spectrographic analysis showed the presence of a number of impurities and this was interpreted to mean that wheel weight alloy was not suitable for bullet casting.

A spectrographic analysis is usually made to determine what metals are present in the sample, and in some cases the report of analysis may give the amounts of the metals present, either in terms of per cents or as major and minor metals. The principal disadvantage of having a spectrographic analysis made of a bullet alloy is that the report actually gives too much information. Unless one has had some experience in the interpretation of the results from a spectrographic analysis, this may lead to confusion.

A spectrograph is an instrument capable of detecting mere traces of many metals (0.001% to 0.10%) and, with the exception of very few metals, none of the common impurities found in the bullet alloy components will have any harmful effect on the casting or use of the bullet alloy. I would predict that if a good spectrographic analysis were made of any alloy in use by handloaders, it would show the presence of about a dozen metals, in addition to those metals which are known to be present.

The A. S. T. M. specifications for seven grades of commercial pig lead commonly used in industry give the following maximum per cents of metals which are present as impurities:

Silver	0.02%
Copper	0.08%
Arsenic	0.0015%
Zinc	0.002%
Iron	0.002%
Bismuth	0.25%

All of the above per cents are quite low but can easily be detected by spectrographic or chemical methods.

There are several factors which determine whether or not an alloy will cast uniform bullets. Probably the most important of these factors is the surface tension of the molten alloy. A considerable amount of research has been done on the effect of different impurities on the surface tension of a variety of type metals. The extent to which a lead-base alloy will flow into the smallest depressions of a mold and accurately reproduce (in reverse) the contour of the mold is of utmost importance in the printing industry.

Zinc has been found to be the most harmful impurity in linotype metal. In one experiment, the surface tension of the molten linotype metal was increased 163% by the addition of only 0.20% of zinc. Its presence in even minute amounts in type metal results in sluggish consistency, poor flowing quality and castability.

A few years ago there was considerable interest in Kirksite, a zinc-base die casting alloy developed by the National Lead Company. A number of experiments on the use of this alloy were described in The American Rifleman. A considerable number of shooters probably tried this alloy with the result that the backstops of rifle ranges over the country now contain these zinc-base alloy bullets. Also some of the recently designed handgun bullets make use of a zinc base. If a handloader recovers bullet metal from backstops or bullet traps where these zinc containing bullets have been fired, he will probably find that the alloy made from this material will have very poor casting properties.

The next important impurity in type metal is copper. Some type metals contain copper, intentially introduced, such as hard foundry metal. Babbitt metals and other antifriction alloys also may contain copper. These alloys contain higher per cents of antimony and tin than linotype metal or bullet alloys and can absorb copper with success, but alloys of lower tin and antimony contents, can not absorb copper in more than trace amoutns. As a result of the small amount of copper, linotype metal and bullet alloys show excessive drossing and, in general do not cast well.

The Government Printing Office considers the following per cents of copper as maximum for three of their type metals:

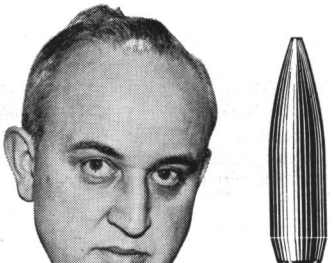
Slug-casting metal	0.08%
Monotype metal	0.10%
Stereotype metal	0.05%

If a handloader or a club wishes to have an analysis made of their alloy, or of unknown alloys from which they wish to prepare a bullet alloy, an analysis for the

(Continued on Page Sixteen)

SMALLEST 30 CALIBER TEN SHOT GROUP EVER FIRED? (at 200 yds.)

Actual size reproduction of the Official 200 yd. Bench Rest Target showing the 10 shot, .584 in. group, shot with Sierra's .30 cal. 168 gr. International in a .308 cal. Winchester using 42 grs. 4895.



FERRIS PINDELL of Richmond, Indiana, writes: "... enclosed is a 30 cal. group I fired at the Nationals... You may use it for any advertising, if you wish. I believe this is the **smallest 30 caliber 10-shot group at 200 yds.** ever fired in competition and I am glad it was at the Nationals."

SIERRA BULLETS

10532 S. Painter Ave. • Santa Fe Springs, Calif.

Have you qualified for your Sierra Award? See your dealer for complete details.

National Bench Rest Shooters Association, Inc.

NBRSA OFFICERS AND DIRECTORS FOR 1964

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MAyfair 2-1711
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Rittman, Ohio
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GULF COAST REGION
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San Angelo, Texas
Area Code 215 655-7912

MID-CONTINENT REGION
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Area Code 913 AT9-6739

MISSISSIPPI VALLEY REGION
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NORTHWEST REGION
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Calistoga, California 94515
WH2-6633

Secretary-Treasurer
Bernice E. McMullen
607 West Line St.
Minerva, Ohio 44657
Area Code 216 868-6132

NBRSA MEMBERSHIP DUES:
Individual annual dues $5.00 (includes magazine subscription for membership term). Associate member (wife or husband, son or daughter under 18 years of age, of member in good standing—no magazine) $2.50. Life membership, $75.00. Annual club affiliation fee $10.00.

PRESIDENT'S CORNER

In this month's issue of Precision Shooting I will try to submit, to the best of my knowledge, the many requests from members regarding the Duties of NBRSA Directors. Many important items I am sure I shall forget to mention, but should any Director care to add to this article, feel free to do so in the following month's issue of P. S.

The term of office of any regional director is two calendar years. Having been properly elected by his region, a director's assignment becomes effective on January 1st. At this time of the year all clubs are preparing their match schedules for the coming shooting season. At this time it is most appropriate for the director to notify all clubs in his region to submit their dates. If possible a pre-season planning meeting should be called, at which with a proper and timely meeting, a match schedule can be set up by a committee of one representative from each club and the director as chairman. A fair and equitable sharing of the dates can be made and match conflictions can be eliminated. This meeting also can be a place for discussion on improvements for the NBRSA. A place to inform the regional director of the desires of the members and instructions to him for regulation stand point. This duty is often overlooked by many clubs and is only thought of after complications arise and a great hassle is formed because of negligence.

All targets submitted for a new record measurement shall be submitted by the director, after he ascertains that everything is in order. It is his duty to see the targets reach the measuring committee as soon as possible so that the targets can be measured at the earliest date possible. Those waiting for the results are asked to have patience and bear in mind that this is all free work and takes a considerable amount of time for both measuring and traveling time.

It is most helpful if the regional director is an active shooter and attends the matches. There he will become aware of the trends and currents as they develop.

A director must do all possible to settle differences of opinion between shooters and assist in the interpretation of our rules. He must acquaint himself thoroughly with the rules and the reason they are established. Should a director be unfamiliar with the rules you will find the members of his area by-passing him and placing his duties on the president. A good director will answer every letter written him and if impossible to submit the right information he should contact the president or other regional directors for help. It is the duties of all directors and the president to come to his rescue.

Should a problem develop in a region and the solution is not clear, or if it is of such importance as to affect the National Organization, it is the duty of the director to inform the president and to ask for assistance.

A director should collect all the information possible in regards to the desires of his members that he may properly represent them at the annual directors' meeting. It is not mandatory that a director attend the annual directors' meeting, but when a director is elected and accepts the duties and responsibilities of his office, he should do so knowing that the most important event of the year is the annual directors' meeting, and is the one opportunity each director has to properly represent his region.

Probably the most difficult task a director has is to restrain his own personal likes and desires, and support those things that are requested by his members or that which is for the good of the NBRSA. A director must answer all proposals and letters sent to him by the president or other regional directors when a request by them has been made.

As I said in the beginning of this letter, there are many duties I have not brought up, and I welcome any director, past president, or member to add any comment or word of importance to supply to those who are interested on the duties of a director.

Sincerely,
A. W. Walter
President NBRSA

P. S. editor's note: NBRSA members submitting letters or articles for publication in the NBRSA section of Precision Shooting should send the original material or a copy of it to NBRSA President Walter. Precision Shooting requires the president's O. K. for any such material published in the **official NBRSA section** of the magazine.)

JOSEPH W. BALDWIN

Joseph W. "Cap" Baldwin was stricken by a fatal heart attack on June 17th at his home in Westboro, Mass., at the age of 74.

"Cap," as he was familiarly known by his benchrest shooting friends in the Northeast, and throughout the nation for his custom-made BALDWIN BULLETS, had been slowed-up for several months past by a heart condition but he recently felt that he was getting along very well and was doing many light chores around his home. He had set up and range officered a bench rest match for the Southboro Gun Club on June 7th and had felt that with help from his fellow club members he would be able to manage the two more matches scheduled for the summer at Southboro.

The morning of June 17th he started to trim his lawn with a power mower but hadn't mowed 10 minutes when his wife Viola found him lying beside the mower. A doctor summoned arrived within a few minutes but it is believed that "Cap" was gone before he hit the ground.

J. W. Baldwin was a "doer," ever ready to help a friend and a promoter of activities that would give pleasure or benefit to others; a man who will be greatly missed by his many, many friends.

P. H. T.

1964 BENCH REST MATCHES

GULF COAST REGION

Abilene, Texas: Varmint and Sporter Class National Championships, Aug. 7th, 8th and 9th. Programs and information from J. L. Bonner, Box 606, Cross Plains, Texas.

EASTERN REGION

Fassett, Pa.: (All for Varmint and Sporter classes; Eastern Region Championship; Aug. 30; Sept. 12 and 13; Pa. State Championship; South Creek Rod & Gun Club, Gerald Arnold, Sec'y, R. D. #2, Gillett, Pa.

Wapwallopen, Pa.: (All Unrestricted and Heavy Varmint) Aug. 15 and 16; Council Cup Rifle Range, c/o Robert W. Hart, 332 Montgomery St., Nescopeck, Pa.

Augusta, Ohio: Oct. 17-18 (Unrestricted & H. Varmint, Ohio State Championship). Reed's Run Rifle Range, Box 66, Augusta, Ohio.

Canton, Ohio: Aug. 22; (All Sat. matches, afternoon and night, Varmint class, all at 200 yards). Canton-McKinley Rifle Club, c/o R. H. Johnson, Sec'y, 3118 11th Street S. W., Canton, Ohio.

Johnstown, New York: Sept. 5 and 6; (Unrestricted, Heavy and Light Varmint, Sporter classes) Pine Tree Rifle Club, Inc., c/o Edward J. Sweeney, 501 North Market St., Johnstown, New York.

MISSISSIPPI VALLEY REGION

St. Louis, Missouri: Aug. 29 (Heavy Varmint-twilight); Oct. 3 (Sporter—twilight). Bench Rest Rifle Club of St. Louis, c/o Arthur J. Freund, 1038 Hornsby Ave., St. Louis, Mo. 63147.

MID-CONTINENT REGION

Hot Springs, Arkansas: Aug. 22 (Var & Spt); Sept. 5 (all classes). Hot Springs Gun Club, B. J. Maddox, Sec'y, 110 Pinewood, Hot Springs, Arkansas.

Kansas City, Kansas: Aug. 29 (night—H. Var.—Reg. Champ); Sept. 26 (night—H. Var.—non. reg.); Oct. 17 (night—unrestricted). Mill Creek Rifle Club, L. F. Carden, Sec'y, 5022 Waverly, Kansas City, Kansas.

Tulsa, Oklahoma: Sept. 16-17-18-19 (Unrestricted National Championship). Tulsa Bench Rest Rifle Club, R. G. Berry, Sec'y, Pawnee, Oklahoma.

Wichita, Kansas: Oct. 3 (night—unrestricted). Wichita Bench Rest Rifle Club, c/o Maj. Richard Hornbeck, Pres., 1640 Windsor, Wichita, Kansas 67218.

NORTH CENTRAL REGION

Buffalo, Wyoming: Aug. 30th, Sporter match; Sept. 27th, Hunters match. Buffalo Outdoor Rifle Club, C. C. Hankins, Sec'y, P. O. Box 151, Buffalo, Wyoming.

Iowa Falls, Iowa: Sept. 19 (Var—nite), Sept. 20 (Spt—day). Iowa Falls Gun Club, Lee R. Boddy, Sec'y, Iowa Falls, Iowa.

NORTHWEST REGION

Seattle, Washington: Aug. 15 and 16, Northwest Championships, four classes. Nov. 22, Turkey Shoot. Puget Sound Benchrest Rifle Club, M. M. Oakley, Sec'y, 7230 So. 116th, Seattle, Wash. 98178.

SOUTHWEST REGION

Yreka, California: Sept. 5 and 6, Third Annual West Coast Championship, four classes (reg.) Yreka Rifle Club, Ray E. Jones, 508 Knapp St., Yreka, California.

THE OFFICIAL PROGRAM FOR THE

1964 NATIONAL CHAMPIONSHIP BENCH REST RIFE MATCHES

TO BE FIRED ON THE

JOHN ZINK RANGE, TULSA, OKLAHOMA SEPTEMBER 16 - 17 - 18 - 19, 1964

Co-sponsored by the Tulsa Bench Rest Rifle Club and the Mid-Continent Region, NBRSA

RANGE LOCATION

The JOHN ZINK RANGE is located on the John Zink Ranch which is about five miles west of Skiatook, Oklahoma, on Oklahoma State Hi-Way #20. Skiatook is 16 miles north of the city of Tulsa on Hi-Way #11.

THE MATCH SCHEDULE

Sept. 16: One 10-shot warm-up match and five 10-shot record matches at 100 yards. Aggregate of five record matches.

Sept. 17: One 10-shot warm-up match and five 10-shot record matches at 100 yards. Aggregate of five record matches.

Sept. 18: One 10-shot warm-up match and five 10-shot record matches at 200 yards. Aggregate of five record matches.

Sept. 19: One 10-shot warm-up match and five 10-shot record matches at 200 yards. Aggregate of five record matches.

CHAMPIONSHIP AGGREGATES

The 100 yard National Championship will be the aggregate of the ten 10-shot record matches. The 200 yard National Championship will be the aggregate of the ten 10-shot record matches. The NATIONAL CHAMPIONSHIP will be the combined aggregate of the ten 10-shot matches at 100 yards and the ten 10-shot record matches at 200 yards.

TWO CLASSES

The 100 yard Championship, the 200 yard Championship, the NATIONAL CHAMPIONSHIP and the Top-Twenty awards will go to the smallest aggregates REGARDLESS OF CLASS. Ranking and specified awards (including optional cash pool prizes) for all fired matches and the daily aggregates will be separate for the two classes, OPEN and LIMITED. Participants will register for the class they wish to compete in. Current NBRSA rules will govern all shooting.

WARM-UP MATCHES

There will not be any prizes for the warm-up matches but scores will be ranked and posted for each class and if any record group should be fired in these matches it will be officially judged and recognized by NBRSA.

FEES

The Club registration fee will be $5.00 per day. The NBRSA registration fee is 50¢ per class per day for members; non-members the same with an additional dollar. Total registration fees for members is $22.00 and for non-members is $23.00.

There will be an optional cash-pool for all fired RECORD matches and all aggregates for each class. The entry fee will be 50¢ per match and aggregate with 100% of the fees returned to shooters on the basis of one award place for each 10 or major fraction of 10 competitors in the pool for each class...Total cash-pool entry fee, $13.50. Total registration fee and cash-pool entry fees; members $35.50, non-members $36.50. (Entry in the cash-pools is optional and required only for those who wish to shoot for cash prizes.)

AWARDS AND TROPHIES

To the NATIONAL CHAMPION; the WHELEN TROPHY with keeper trophy supplied by NBRSA, the FIELD & STREAM TROPHY with keeper supplied by donor, and the BAUSCH & LOMB PLAQUE. To the 100 YARD CHAMPION: the SPEER TROPHY with keeper supplied by donor. To the 200 YARD CHAMPION; the SIERRA TROPHY with keeper supplied by donor. To the second, third, fourth and fifth places in the National Championship Aggregate (regardless of class); trophies supplied by the Tulsa Club and the Mid-Continent Region.

To the Daily Aggregate Winner (regardless of class) a trophy donated by the Tulsa Bench Rest Rifle Club. The National Bench Rest Shooters Association, Inc. will award TOP-TWENTY patches for the twenty smallest National Championship Aggregates (regardless of class) and will award a Lariet Tie to first place in EACH CLASS for all National Course record matches and aggregates.

GENERAL INFORMATION

Camping facilities are available at the range for those wishing to "rough it." Motels are available in Tulsa, about 45 minutes from the range, and a few may be available in Skiatook and Hominy. Meals will be available at the range each day. The range will be open for practice Monday and Tuesday prior to the start of the Nationals, except for time required to do any necessary repair work on equipment. For further information contact:

R. G. Berry, Pawnee, Okla. 918-PO2-2216 Art L. Day, 2124 So. Oswego Pl., Tulsa, Okla. 918-WE 6-8984

L. F. Carden, Regional Director, 5022 Waverly, Kansas City 4, Kan., 913-AT9-6739

L. E. Cornelison, 600 Roosevelt, Seminole, Okla. 405-EV2-1492

A CORRECTION

An unintentional error is in the program for the National Varmint and Sporter Championships at Abilene, Texas, which members have received.

At the bottom of the 6th page, in box, is the statement that "The NBRSA is not an incorporated membership organization." This statement was quite evidently copied from the 1963 program, which went uncorrected.

The NBRSA, Inc. **IS** an incorporated membership organization and has been since 1956.

This correction is made at the request of President Walter and **IS NOT** any critical reflection on the West Texas Sportsman Club, or Gulf Coast Region, which have made a fine program available to NBRSA members.

LETTER FROM A MEMBER

To the Editor of Precision Shooting:

In a number of letters during the past year I have written of the purposes for which the National Bench Rest Shooters Association, Inc. was formed, and how these purposes were served by the present Rules and Regulations for Registered Bench Rest Tournaments. Naturally the ideas expressed were my own and, naturally, they have not met with universal approval.

In a recent number of "Precision Shooting" a letter from Sam Wilson took me to task by quoting the late Townsend Whelen against my quotations from the same writer. His letter illustrates that I have failed to make clear that the development of accuracy in rifles is properly a function of research and development, and does not occur in tournaments. The knowledge gained in research and development, of course, pays off in tournament shooting, but it does not follow that the tools used in research and development are proper to use in competitive shooting.

It is not inconsistent to the purposes of the Association to pursue the different objects of the Association separately. In fact it is more logical to do so.

The principles developed in my letters are that accuracy is a function of the rifle and its ammunition. That, although the form of rest may contribute to smaller groups it does not contribute to accuracy as such, the rest merely making small groups possible with less skill on the part of the shooter. Also, by pointing out certain unorthodox methods of mounting what are essentially barreled actions, a tendency to freak design which is not consistent with the traditional form of rifle has been encouraged.

None of my critics has taken issue with any of the principles above summarized. They seem to fear that I would like to "outlaw" the return to zero rest. This is far from my intent. I merely want to segregate such rests and the firearms that are used with them so that they compete with each other and not with the "traditionalists."

My thought is to recast the sections of the Rules and Regulations in such a way as to have a truly Unlimited Class. This would be accomplished by deleting all references to the Unlimited Rest Class and providing in its place an Any Firearm Class, in which any form of rest capable of being set on a bench and any form of firearm with any safe type of ignition would be permitted. Any new records established by this class in competition would be recognized, but the winners would not be entitled to greater awards than Championship of the Any Firearm class.

A number of other features of the Rules and Regulations require re-examination. The rule disqualifying a target for less than ten shots on the record target, which was inadvertently omitted in the last edition should be restored. The rule disqualifying a target for a shot outside the margin of the record target should be reconsidered. Such a shot, if it misses the target completely, as when the rifle is fired accidentally while setting the trigger, can not be detected and disqualification can only follow a report by the competitor himself. Such a rule will work a hardship on a conscientious shooter.

Also the rule on tapered barrels for Varmint rifles should be coldly examined. In an Association seeking accuracy such a limitation is arbitrary and inconsistent with the objects of the founders. If a tapered barrel must be required, a maximum barrel should be defined and any barrel within the dimensions of the maximum would be permitted. At present, if any shooter having a maximum permissible barrel should desire to shorten his barrel, he is required either to rechamber and rethread the breech or to cut off the muzzle and re-taper the entire barrel. My thought is that no taper should be required. Suppose a Varmint shooter achieves the required weight with a steel lined aluminum barrel. Why should he be required to taper it? What useful purpose would it serve? Wherein would it promote accuracy?

The Varmint shooter is the hope of growth of the Association and no unnecessary obstacles should be placed in his way.

The present Sporter Rifle differs in no respect from the Light Varmint Rifle except that its caliber must be greater than .230". Practically, this means a 6 mm. The proposed Hunting Rifle would be the same as the present Sporter except for the power of the telescope sight. How far can we go in splitting hairs? It was a mistake to permit the Sporter to use a high power telescope. Why create a new complication to conceal the mistake? We do not need a new class. Just re-define the Sporter with the requirement of a low power scope. The present Sporters can become Light Varminters with high power scopes, or can change scopes and become Sporters under the proposed Hunting Rifle definition. If a sporter isn't a hunting rifle, what is it?

I wish my readers would express their opinions on these points to their regional directors, so that they may be informed of the sentiments of the membership when they meet at Tulsa. They try to do a job, but have a very uncommunicative constituency to represent.

Charles Kingsley

Bench Rest Match Reports

EASTON, OHIO

The Chippewa Rifle Club, Inc. held its first registered match of 1964, for unrestricted rifles at the 200 yard and 300 meter ranges, May 9 and 10 on the Easton, Ohio range. The high ranking aggregates were:

5-shot—two range

L. Rucker	.4302
R. Hart	.4408
F. Pindell	.4556

10-shot—two range

L. Rucker	.6022
R. Hart	.6122
D. Frost	.6488

WAPWALLOPEN, PENNSYLVANIA

The registered shoot on the Council Cup Range at Wapwallopen, Pa. was for Unrestricted Rifle, both Limited (30 comp.) and Open (6 comp.) and Heavy Varmint Rifle (23 comp.). The high ranking aggregates were:

Unrestricted Rifle

100 yard—Limited

T. H. Boughton	.4070
Paul O. Gottschall	.4410
Olin M. Davis	.4636

100 yard—Open

A. H. Angerman	.4760
I. E. Jotter	.5510

200 yard—Limited

Paul O. Gottschall	.4691
George McMullen	.5332
Ralph W. Stolle	.5407

200 yard—Open

A. H. Angerman	.5613

Grand Aggregate—Limited

Paul O. Gottschall	.4550
Ralph W. Stolle	.5155
George McMullen	.5370
T. H. Boughton	.5463
Omar Rinehart	.5734

Grand Aggregate—Open

A. H. Angerman	.5186
I. E. Potter	.6129

Heavy Varmint Rifle

100 yard

J. M. Reece	.4570
Ross Sherman	.4584
Lymm Hunt	.4608
D. B. Hufnail	.4782

200 yard

Ed Shilen	.4452
Arnold Banker	.4999
Chester Andrews	.5053
Charles M. Fulmer	.5190

Grand Aggregate

Ed Shilen	.4696
Ross Sherman	.5064
Charles M. Fulmer	.5190
Lynn Hunt	.5352
Wm. S. Kappel	.5467

Six shot .30 cal. in the unrestricted class. Highest ranking with .30 cal. was grand aggregate 5th place Omar Rinehart. One shot .30 cal. in heavy varmint class and placed 10th in the field of 23.

AUGUSTA, OHIO

Eighteen competed in a night match for unrestricted rifles at Reed's Run Rifle Range, June 6th. Paul Gottschall made a clean-sweep win of the aggregates with .3671 at 200 yards, .2676 at 100 and .3173 for the grand aggregate. Ernest Scafuri had .4480 for 3rd at 200 yds., 2nd place .2760 at 100 and 2nd in the grand with .3620. Omar Rinehart was 2nd at 200 with .4310 and 3rd in the grand with .3940. Edgar Walker was 3rd at 100 yards with .3080.

KANSAS CITY, KANSAS

Mill Creek Rifle Club held its first open (unrestricted rifle) bench rest match for '64 on Saturday, June 6 with 16 shooters. Conditions were good with light wind in the afternoon for the 100 yard matches. The 200 yard matches were shot after supper under light. Bud Carden shot small group at 100 yds. with .215" and Horace Powers the small group at 200 yds. with .370", which is a new range record.

The top ranking aggregates were: 100 yards; Bud Carden .265, Walt Berger .352, Bob Stultz .357, D. Cunningham .380 and Bernard Geenens .382. 200 yards; Carden .2905, Larry Engelbrecht .3465, Stultz .3705, Horace Powers .3730 and Rick Hornbeck .4120. Grand aggregate .2777, Stultz .3637, Engelbrecht .3712, Powers .3875 and Berger .3920.

The entire field of sixteen shooters averaged .429 at 100 yds., .475 at 200 yds. and .4506 in the grand aggregate. (Editor's note: That may constitute some kind of a record. There were only 3 of the 16 grand aggregates more than half-minute-of-angle and the biggest was .6469.)

Mill Creek is holding a tyro match in conjunction with the Mid-Continent Regional Varmint Rifle Matches at Kansas City, Aug. 29th. The match will consist of five 5-shot matches at 100 yards, with a five dollar entry fee. This entry fee will go to the NBRSA to purchase each tyro shooter a year's membership. In addition to trophies for the first three places and small group there will be merchandise awards for each fired match. The rules for this match will be the same as the heavy varmint class rules except each competitor must shoot his own equipment regardless of what he owns and the competitor must never have been a previous winner in any match in a registered NBRSA shoot.

CANTON, OHIO

The Canton-McKinley Rifle Club held its first **registered** heavy varmint class shoot of the season on Saturday, June 20th, with 22 competitors. All benchrest shooting at the Canton-McKinley range is at 200 yards. Shooting is for score and all matches and aggregates are ranked by score value, but the groups are measured and recorded to meet NBRSA requirements in registered matches. At this shoot, five 5-shot matches were fired for a five match aggregate in the afternoon, beginning at 2:30. Following this there was a break for lunch and after that another five match aggregate was fired under lights.

For the afternoon aggregate, Neal Waltz, Canton, fired the winning aggregate score of 250-20x with group aggregate of .7645 MOA. He was followed by Paul Gottschall with 250-19x and .5078, Worthy Shock, Canton, 250-17x and .6745; "Cowboy" Rucker 249-21x and .4978, James Anderson, Canton, 249-19x and .5862.

Five possible scores were fired in the night aggregate. Gottschall had 250-21x with also smallest group aggregate of 4492 MOA, Anderson had 250-20x and .4961, Omar Rinehart 250-18x and .4831. Wayne Espenshied 250-15x and .6271, and W. C. Davidson, North Canton, 250-14x and .5212. Bernice McMullen, ranking 13th with score of 247, had second smallest group aggregate of .4555 and 12th place George Kelbly with 248 had 3rd group aggregate of 4696.

The Canton-McKinley Club had 15 shooters for their unregistered shoot on June 5-6, Waltz winning with 250-22x and Rucker with 250-20x—Waltz's score was a new range record. There were 18 shooters for the June 26-27 shoot. C. Griffith, who started benchrest competition last year, won with 250-18x; Gottschall was runner-up with 250-17x, and Jay Winter, in his second benchrest match, was 3rd with 249-16x. James Anderson fired an 8 for his first shot in his first match and then went on to shoot 24 X's for a range record and 4th aggregate place.

SEATTLE, WASHINGTON

The Northwest Regional Benchrest Rifle Championship Matches were conducted by the Puget Sound Benchrest Rifle Club Inc. on June 13 and 14. Shooting conditions on Saturday were good for the 100 yard stage but became tough on Sunday at 200 yards with gusts of wind switching from left to right.

The unrestricted rifle limited and open classes were combined with only 3 of the 11 competitors shooting "open" class equipment. L. E. Wilson, shooting his 308, M70, Hart barreled "Limited" class rifle, ranked only 6th in the 100 yard stage with .5064 but won the 200 yard stage with .4625 and the grand aggregate with .4843 to beat Ed Frombach's .4845 agg. Frombach won the 100 yard stage with .3638 but switched ranking spot (6th) in the 200 yard stage. Roy Norman ranked 3rd in both range aggregates and in the grand with .4849—an extremely close finish for three shooters.

Ted Smith of SAS Dies donated an award of a complete set of his bullet making dies and his press to go to the smallest grand aggregate in the combined Limited and Open class, shooting factory bullets. Ed Frombach shot 52 gr. Sierra bullets in his 222 Magnum, Hart barreled, Remington action and won this award. Wilson shot his own hand swaged 163 gr. bullets in his 308. Norman, shooting Speer bullets in his Hart barreled, Weber action 222 Mag., again "came close" to winning.

Ed Frombach and Roy Norman had a real tussle for 1st place in the Heavy Varmint grand aggregate, as did Allen Bench and L. E. Wilson for 3rd place. They ended up; Frombach .4621, Norman .4742, Bench .5726, Wilson .5788, to top the field of 11 shooters.

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Host Club secretary Manley Oakley only fired the 100 yard matches on Saturday, and placed in all the 100 yard aggregates—won the light varmint with .4396, was 2nd in the combined unrestricted class with .4053, and was 3rd in heavy varmint with .4098.

Nine shot the 100 yard light varmint matches but only six shot the 200 yard matches for a grand aggregate—top three were Allen Bench .7126, L. E. Wilson .7276 and J. Swick .8197. Ed Fromback was next to Oakley at 100 yards with .4996, but an unfortunate over 6 inch group at 200 yards put him at the bottom of the list for that range.

EASTERN REGION VARMINT AND SPORTER CHAMPIONSHIPS

The Eastern Region Varmint and Sporter Championships were fired on the Fassett, Pa. on June 13-14 wiht 41 shoot-South Creek Rod & Gun Club Range at ers competing.

Forty competed in the Heavy Varmint class matches. In the 100 yard stage, 12 made half-minute-of-angle or under aggregates. The high five were: Lynn Hunt .3922, Chester Andrews .3938, Ed Shilen, .4018, Robert Hart .4032, and Wallace Hart .4108. Emily Shilen shot smallest 5-shot group at 100 yards—.160 inch.

The five high at 200 yards were: Wallace Hart .4046, Lawrence Rucker .5489, Arthur Glover .5771, Gerald Arnold .5827, and Paul Gottschall .6176. Wallace Hart shot smallest group at 200 yds.—.527 inch—and Gerald Arnold shot one of .528 inch.

The Grand Aggregate Five High were:

Wallace Hart	.4077
Paul Gottschall	.5229
Gerald Arnoold	.5325
Lynn Hunt	.5481
George Stannard	.5592

Sixteen shot the light varmint matches. Three high aggregates at 100 yds. were: Robert Hart .4014, Gerald Arnold .4944, and Wallace Hart .5460. Robert Hart shot smallest group of .304 inch. Three high aggregates at 200 yds. were: Robert Hart .5757, Dave Hall .6055, and Wallace Hart .6059. Small group of .714 by Paul Kempfer. The Grand Aggregate High Five were:

Robert Hart	.4885
Wallace Hart	.5759
Dave Hall	.6141
Paul Kempfer	.6325
Donald McClure	.6477

Sporter Class had an entry of twenty-one. Five high in 100 yd. aggregate were: Paul Gottschall .4694, Arnold Banker .4726, Wallace Hart .4842, Robert Hart .4986, and Dave Hall .5306. Smallest group of .296 inch by Dave Hall. Five high in 200 yd. aggregate were: Paul Kempfer .7563, Paul Gottschall .7983, Arthur Glover .8134, Dave Hall .8190, and Bill Purcell .8234. Small group of .795 inch by Gerald Arnold.

The Grand Aggregate Top Five were:

Paul Gottschall	.6338
Paul Kempfer	.6624
Wallace Hart	.6649
Arnold Banker	.6661
Dave Hall	.6748

Eleven completed aggregates in all three classes. The top three over-all grand aggregates were by: Wallace Hart .5495, Robert Hart .5872, and Arthur Glover .6497.

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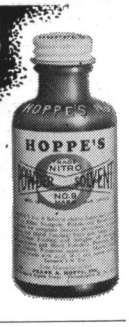

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BENCH REST MATCH REPORTS

TULSA, OKLAHOMA

At the Tulsa Bench Rest Rifle Club night shoot on June 20th, twenty competed in heavy varmint rifle class and five in the unrestricted rifle class. Club secretary Bob Berry reports that after three days of 'blowing like hell' the wind died down to a murmur for the 100 yard shooting, but a gusty breeze picked up for the 200 yard shooting.

For Varmint class the high ranking aggregates were: 100 yds.—Larry Beard .2882, Allan Hall .3194, and Bob Berry .3352. 200 yds.—Jack Morgan .4290, L. E. Cornelison .4963, and Larry Beard .5890. Grand aggregate—L. E. Cornelison .4233, Larry Beard .4386, and Jack Morgan .4715. Larry Beard shot smallest group at both 100 yds. (.134) and 200 yds. (403").

With unrestricted rifle, Bill Taylor was 3rd at 100 yds. with .4024, won at 200 with .7865 and the grand with .5944. Ed Garrott was 1st at 100 yds. with .3300, 3rd at 200 with .8912 and 2nd in the grand with .6106. Garrott shot small group at both ranges, .198" at 100 and .937" at 200. Art Day was 2nd in both range stages but ended up 3rd in the grand with .6253.

TEXAS STATE CHAMPIONSHIPS

Thirty-five competed in Light Varmint Rifle class and fourteen in Sporter class at the Texas State Championship matches fired on the West Texas Sportsman Club range at Abilene June 27-28. Shooting conditions are reported to have been fair for the time of year but still hard to dope, as proven by the number of disqualifications.

SPORTER CLASS: Aggregate winners were: 100 yds.—Dr. Sam B. Nadler, New Orleans, La. .608; Aubrey Daugherty, Alamogordo, N. M. .645; John I. Moore, San Angelo, Texas .771. 200 yds.—Daugherty .9073; Ralph R. Saylor, Alamogordo, N. M. .9906; Dr. Nadler 1.0451. Grand aggregate—Daugherty .776; Dr. Nadler .826; John I. Moore .909; Saylor .986.

In the 100 yard warm-up match, H. B. Reagan, Big Spring, Texas, shot a 5-shot group which was range measured as .177 inch. This is smaller than the national record that he already held and the target is being submitted for record judging. His equipment for shooting this group was a 24" Hart barrel on Rem. action chambered for the 6X47 cartridge, gunsmithed by Hart. His scope was an Unertl 20X and his load was 26.7 grs. of Ball C-1, Sierra 60 gr. bullet and Rem. primer.

John I. Moore gave a $10.00 prize to the winner of a 3-shot 'cold barrel' Sporter class match. The smallest groups in this match were by Grady Canter .236, F. W. Jarrett .269, Fred Bussell .286, and J. H. Carpenter .291. Mr. Moore is procuring a permanent trophy for a 3-shot 'cold barrel' sporter class match to be fired each year at the Nationals.

LIGHT VARMINT CLASS: Aggregate winners were: 100 yds.—Dr. H. W. Ward, Snyder, Texas .5102; Fred Bussell, Abilene .5164; John I. Moore .5494. 200 yds.—Bussell .7280; John D. Richardson, Abilene .7966; June Thompson, Abilene .8090. Grand aggregate—Bussell .6222; Richardson .6756; Dr. Ward .7080; J. C. Roberts, Abilene .7101.

Those competing in Sporter class all shot one or another of the 6mm caliber cartridges. In the Light Varmint matches a number of the competitors used the same 6mm rifle they shot in Sporter class, but 23 of the shooters used .22 cal. and all but one of those were of the 222 family of cartridges, with the standard 222 being far in the lead.

CUSTER, SOUTH DAKOTA

Six shot Heavy Varmint and Sporter class aggregates at Custer, S. D. on June 7th. Bruce Pheasant, Buffalo, Wyo. won the heavy varmint class grand aggregate with .583. Harold Bing, Newcastle, Wyo., won the Sporter class grand agg. with .826.

RICHMOND, CALIFORNIA

Attendance at the hunting rifle bench rest matches conducted by the Richmond Rod & Gun Club continues to gain. There were 53 shooters at the June 14th match.

Kit Puett from Lakeport shot the winning aggregate score of 230X250. Henry Smith, Lodi, had 226 and Ken Hobbs, El Cerrito had another 226. J. W. Curry, Lakeport, had 225 and R. A. Syler, Lakeport, had 224.

Puett shot a 270 Win. while the other 4 top scorers shot either 243 Win. or 244 Rem. calibers. Over-all, a pretty good number of the popular hunting rifle cartridges were being used, including a few of the Magnum calibers. The various 6mm cartridges out-numbered any other caliber but the .30's were not far behind, mainly the 30-06 and 308 Win. cartridges.

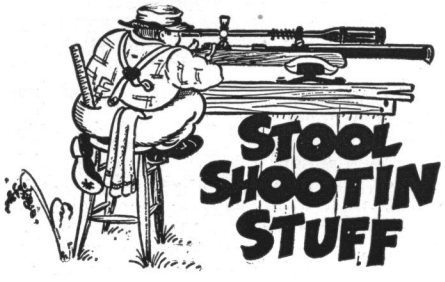
"RED-HOT" SHOOTING

At the Canton-McKinley Rifle Club (Ohio) non-registered 200 yard Varmint Rifle match July 10th and 11th, Jim Anderson of Canton shot a perfect 250-25x score and .2966 MOA for the five 5-shot matches. His biggest group was .774" and smallest .430". He shot a Hart barrel on Remington 722 action and used **Sierra bullets.**

W. C. Davidson, Omar Rinehart and Paul Gottschall all shot 250 possible scores with respective group aggregates of .5653-.5718-.6333.

NBRSA Secretary Bernice McMullen dropped one point for a 249 score but had second highest X-count (21) and second smallest group aggregate (.4523).

Twenty-one shooters fired the five-match course.



Dear Phil:

I think one of the most important items in the last issue of Precision Shooting was the letter that you reprinted from Fred Hallberg. It seems to me that it behooves every shooter to start making plans for a very aggressive campaign this fall. To you and to me and to thousands of other shooters, the question as to who is the Republican nominee for President, or in fact who becomes President, is of secondary importance. The country will get along with somebody at the head and it is presumed that we will progress, although occasionally I am very discouraged at the trends which are taking place. I doubt if there will be either a pro or an anti gun plank even mentioned in either of the platforms but I am very much of the opinion that as soon as the election is over, gun owners will be faced with the most serious problem that they have ever known in this country. The politicians won't allow the smouldering subject to burst into flame and jeopardize the loss of a few votes of the gun owners until after they have been elected. It is very unfortunate that some years ago we did not accept our responsibilities in the direction of public relations and try to build up a more favorable impression in the public mind.

It makes my blood boil to see and read about the Columbia Broadcasting System's television report which clearly was nothing but a biased effort to bring about legal restrictions against all users of fire arms. I never recall meeting Mr. Lowe but if we believe what the American Rifleman prints, his slanted effort is low, indeed. It is, of course, useless to talk against Mr. Lowe as an individual. He and CBS will probably continue to follow the course which they have set upon and will try like so many other do-gooders who are always butting into other people's business to convince us that they are most righteous. The Salem witchhunters did the same thing and it has been continued through the years by preachers, educators and civil righters who among others are continually building up their own importance by sponsoring a cause which they think will make them more popular.

It seems particularly ironical to me that a television network should now pick up their weapons to deprive the shooters of theirs. Do you think that anyone of those broadcasting networks would for an instant have the guts to reject any program that showed a gun. It certainly would surprise me very much. They have taken in too many millions of dollars of cash by featuring guns which kill people. It is my sincere belief that the acceleration they have caused in the crime rate has been of shameful proportions. For fifteen years, they have been teaching people how to plan crimes. Children whose families knew nothing of guns are buying toy ones and imitating what they see on the television screen. They point them at their mothers, fathers and anyone else, and it is a rare parent who disciplines the child by telling them that even toy guns should not be pointed at or toward people. This all started far enough back so that those babies are now swelling the ranks of teen aged criminals.

I live in an area where a criminal has used a nylon stocking for a number of murders. The assaults which accompanied them were committed upon women of various ages but had pistols been in the boudoir table drawer of these women, the criminal would long since have been dead.

I'm not naive enough to think that pistols in the hands of everybody would be wise but I do think that a police force alone can never be adequate to fully protect against criminals. I likewise believe that our armed forces, no matter how capable they may become in the use of their side arms or shoulder weapons, could not properly protect our citizenry under certain conditions.

All of this is but one angle and completely aside from the angle that deals with the use of firearms as a sport. The readers of this column practice this sport so avidly that it comes close to being a science. The efforts of these people have resulted in pleasant hours that have in some instances, I feel quite certain, prolonged their lives. It is interesting to note the great majority of them learned the proper use of firearms several generations ago. They have passed through military stages and active hunting periods and all through this time, they have fervently hoped that shooting would take its place as an accredited sport. There are thousands of other shooters who look forward to an annual hunting trip who cannot by any stretch of the imagination be considered as a potential danger to their community. Not all but certainly a great predominant majority of them are outstanding responsible citizens. They are the kind that get things done in their community and prevent things being done that are a detriment to the community.

In my book of experience, there have been three important wars. We lost lives by countless numbers because boys entering the service were unfamiliar with weapons and the services were not properly devel-

oped to take care of this deficiency. We are advised now that we may face as much as several decades of the type of war which places great stress on the ability of the soldier to take care of himself in times of danger. I am positive that experience in the hunting field would be an asset to these boys. Our enemies in World War I had a high regard for the shooting ability of our Marines. At Bellau Woods, it was a number of well placed bullets from guns in the hands of our boys that counted, and at Viet Nam, the need is as great. This conflict has already cost many American lives and as the intensity increases, the ability to use firearms will pay off.

The good fellowship characteristic of those who shoot for pleasure is not enjoyed by all sports. The little tribute expressed by the new shooter from Massachusetts has been felt by many who entered the game. This image and the image of responsibility, our excellent safety record and intense interest in perfection makes many look up to us and we must capitalize on this situation if we are going to win the battle to retain arms.

I enjoyed the Shop News column by Roy Dunlop as I always do and was especially intrigued by the story about the "Erma" insert. It takes me back to the very early days of benchrest shooting and the stories told to me by the old timers attesting to the excellent shooting qualities of relined barrels. Indeed, there were many examples where the relined barrels were making outstanding groups. In discussing this subject, many of us thought that possibly the soldering operation to put these liners in place had a dampening effect which was advantageous to the accuracy. Here we have an example of very good accuracy in the case of Roy's experiment and no solder to dampen the vibrations. Could it be that the semi restricted free floating effect has merit. Perhaps somebody will do the fluted barrel people one step further and use a fluted or helically turned exterior on an interlining and we'll be sliding in replacement liners of the same or various calibers in our benchrest rifles of the future.

Speaking of barrels, I am in the midst of a lot of enjoyment from an old rifle that a friend of mine gave me. He had picked it up when he was a young soldier and sent down with a Massachusetts unit for duty on the Mexican border several years prior to World War I. There have been a lot of changes since those days, not the least of which is our monetary system. My friend, Theron Appolonio, served at a time when a soldier's pay was $15.50 a month and the day on which the eagle screamed, the pay master was on hand to present to each soldier a newly minted ten dollar gold piece, the same for a five dollar piece and a bright shiny newly minted fifty cent piece. Theron grew up in my home town of Milton, Massachusetts where a familiarity with firearms and an enjoyment in using them was not uncommon even though the suburbs of Boston, especially Dorchester Heights on which the colonists placed their cannon to drive the British forever from Boston Harbor was hardly more than a long range shot from where we boys exercised our firearms. The rifle which he gave me was a 7 m/m Mauser of the '98 type and the workmanship in it is a joy to behold. It was made in 1903 and the glass smooth chamber and barrel 29" long feels as smooth as the latest button types to a patch and ramrod. The wood in the stock is the equivalent of a $50 blank and I just wish all of my hunting rifles would make such good groups. I shot it with the original sights that are a little on the course side and even with them it groups well enough to match the highest manufacturers accuracy requirements that I know of. Do you realize that this rifle was delivered in 1903, al-

(Continued on Page Sixteen)

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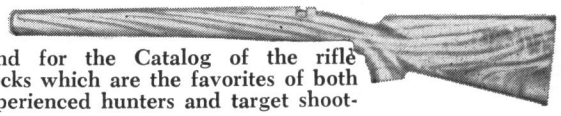

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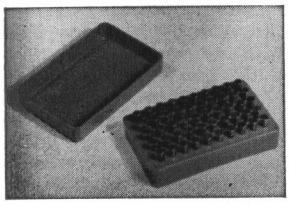

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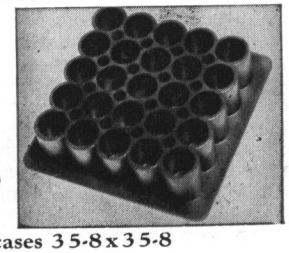

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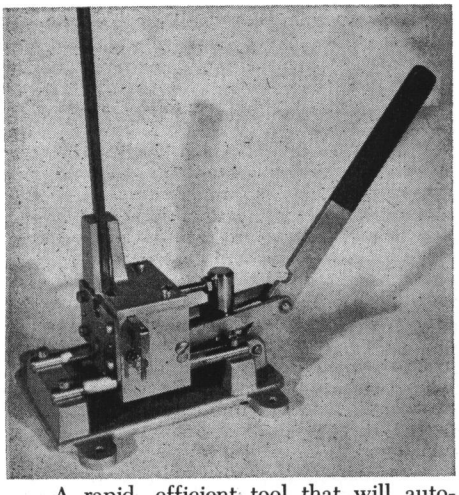

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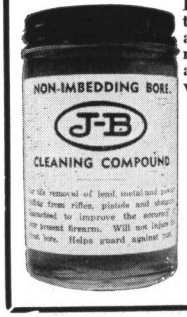

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most before our Springfields were born. You get an idea of how advanced was the Mauser design. What a close control they must have had on dimensions, too. I inserted the bolt from that old rifle in another action which was made in 1924 and could detect no difference in head space or fitting.

Phil, I have been unhappy to hear bad news about Cap Baldwin. We shooters who have come in contact with him frequently have had a very warm spot in our hearts for him. He ran the Southboro shoots as a splendid example of efficiency and enjoyment.

I hope that at the time this column is printed, if there are any shooters who have not filled out the questionnaire on Page 10 of the June-July issue, they will do so immediately. It was disappointing to see the small number of answers to our previous questionnaire. It probably was not disinterest but merely that of procrastination.

Cordially yours,

Ernest Stuhlreuter

Analysis of Bullet Metal

(Continued from Page Nine)

per cents of antimony and tin will supply most of the information needed. Any commercial testing laboratory can make these analyses, and almost any high school chemistry teacher should have the equipment necessary to make a good analysis. Analyses for zinc and copper on the unknown materials will also tell something about how the alloy will behave while casting. If the copper per cent is excessive, this material can be used up by blending it with copper-free materials in amounts which will result in an alloy having an acceptable copper content.

I have never had any success in trying to use up an alloy contaminated with zinc. It has been much simpler for me to dispose of this contaminated alloy by selling it to a junk metal dealer.

If a sample is to be submitted for chemical analysis, it is essential that the sample be momogeneous and representative of the entire lot of material. The best way to obtain a representative sample, and at the same time insure a uniform composition of a batch of alloy is to melt the entire collection of alloys or metals together, stir well, flux, skim and cast in small ingots of convenient size. Testing laboratories usually want from ½ to one pound of the alloy for their analysis.

A melting pot of sufficient size to hold two or three hundred pounds of lead is not always available to a handloader. This writer once borrowed a coal fired melting pot from a city water department which worked nicely to blend about 300 pounds of metals.

Many hand loaders are not aware that pure lead is extremely hard to find. One of the purest forms of lead made commercially is known to the trades as "corroding" lead and contains a total of only about 0.06% impurities. This grade of lead is not practicable for use by the handloader, chiefly because of its high cost. Also it is doubtful if one would find this grade of lead as scrap metal. Practically all the lead which is available to the hand loader as scrap from pipe, sheet, plumber's lead, etc. contains antimony. Wheel weights and battery lead may contain as high as 6% or 7% antimony. For this reason, the handloader who claims to use nothing but tin and lead in his bullet alloy may be surprised to learn that his alloy contains considerable antimony. There is nothing particularly objectionable about lead-antimony alloys for bullet casting. Many handgun shooters use these alloys exclusively. They do not rate as high in castability as the lead-tin alloys, however, and their hardnesses have been found to change slightly with time.

The term "virgin" metals is frequently seen in the advertisements of commercial cast bullet manufacturers. This is a very high-sounding term and adds to the effectiveness of the advertisement. It is difficult to find out just what the term "virgin" means when applied to bullet metals. We may assume that it is intended to refer to a metal, such as lead, which has been extracted from an ore and then refined to minimize the amounts of impurities. It would also probably mean that the metal has never been used before. This may or may not be true.

The 1962 edition of the Minerals Yearbook, Volume I, states that the amount of refined lead produced in the United States in 1962 from ores and lead bullion was 376,063 tons while the lead recovered from scrap was 444,202 tons. There were also 13,677 tons of tin and 19,362 tons of antimony recovered from scrap in 1962.

The following paragraph is quoted from a book published by one of the large manufacturers of type metal*. What is said about type metal alloys also applies to bullet alloys.

"Type metal consumers are often deliberately misled by talk of "virgin" metals, when scientific valuation of the alloy is entirely a question of the purity and perfectness of alloying. Virgin metal means nothing as to quality, as the poorer grades of tin, for instance, at much lower cost, are equally entitled to the term "virgin." The purity by acid test of its components parts is the absolute measure for determining the value of type metal both from the standpoint of cost and service."

Whether or not the metals used in the preparation of bullet alloys came directly from ores or scrap metal will have no effect on the casting properties of the alloy. The important factors are low contents of such metals as zinc and copper. Also the metal must be **clean,** which means that it must be thoroughly stirred, fluxed and skimmed.

*The Imperial Type Metal Company.

Tournament Circuit

(Continued from Page Seven)

Following Bill's "regular" 1600 were a 1594 belonging to Paul R. Volkman, Seattle, Wash., and a 1591 shot by Victor B. Fogle of Springfield.

The any sight matches on Sunday were dominated by Volkman, who won three to Schlitzkus' one. Volkman's wins were not decisive enough, however, to capture the any sight aggregate, which he lost to Schlitzkus' 1598-124 by 2 X's. In third spot again was Vic Fogle with 1596-118. These same three shooters maintained their positions in the grand aggregate with respective scores of 3198-247, 3192-239 and 3187-219.

Bill Schlitzkus currently holds the state any sight aggregate record, also, with a 1600-136 fired on the same range two years ago.

The small (20 firing point), semi-protected McKenzie Bridge range is not widely known, for only three smallbore tournaments have ever been held on it, but it provides some of the quietest and most pleasant shooting conditions of any range in the Northwest. Conditions were almost perfect during the iron sight matches, with very gentle drifts moving one back and forth across the X-ring. Indeed, it is a wonder that there weren't more high scores, but most of the shooters had a few bad sight pictures and poor let-offs. Conditions on Sunday were not quite so good, with frequent reverses that could take one out of the 10 ring if the shooter was careless. Fair weather provided good illumination and enough mirage to watch on both days, but the ample firing point cover kept the shooters comfortably cool.

The high ten in the grand aggregate were:

F. W. Schlitzkus	3198-247
Paul R. Volkman	3192-239
Victor B. Fogle	3187-219
Karen E. Dapp (Hi Ex)	3183-174
L. J. Frickey	3182-208
Gary Tuck (Hi Mks)	3177-200
A/eC William D. Toursh	3177-176
Jean E. Privat	3176-161
Charles O. Bowles	3174-176
Charles F. Smutz (Exp.)	3169-172

In the sharpshooter class, Charles D. Leonard, Oregon City, Oregon, defeated John Silveira, Ripon, California, by a single X, with 3163-145.

Schlitzkus used a Remington 37 action with Douglas barrel soldered in by Karl Kenyon, Ely, Nevada. His other equipment included a cherry wood Kenyon stock, a Kenyon trigger, a Kenyon rear sight, a Kenneth Hooper front sight, and a Lyman Supertargetspot scope. He shot Remington ammunition.

Volkman shot an Anschutz with an additional weight forward of the forend.

Victor Fogle
Charles D. Leonard

NORTHEASTERN REGIONAL SMALLBORE CHAMPIONSHIP

The 1964 Northeastern Regional Smallbore Rifle Prone Championship tournament was conducted by the Connecticut State Rifle and Revolver Association on the Blue Trail Range in Wallingford, Conn., June 27 and 28 with 136 shooters participating.

Sam Burkhalter, Stamford, Conn. won the Regional Championship with a score of 3189-232x, having a margin of 8 points and 8 X's over runner-up Walter Tomsen of Flushing, N. Y. Sam had things well under control on both days. He won one iron sight match, was runner-up in the other three and won the iron sight aggregate with a 1593-112x score, four points up on Frank Boyd of Dover, N. J., and six up on Walter Tomsen. He won the first any sight match (50 yds.), was runner-up in the next two and dropped to sixth place in the final match on Sunday. He lost the any sight aggregate runner-up spot to Lloyd Norton, Bridgeport, Conn. on the ranking of a tie score, both having 1596-120x and both beaten by Laurence Moore, Aberdeen, Md., who scored 1597-112x.

The Top-Ten in the Championship aggregate were:

Sam Burkhalter	3189-232
Walter Tomsen	3181-224
Laurence Moore	3177-199
Loren Samsel	3176-219
Lloyd Norton	3174-194
Frank Boyd	3173-184
James Bielenberg	3167-194
Robert Blatchley	3166-196
Elaine Bugyi (Hi-Ex)	3164-175
Edward Clausen	3163-197

High Sharpshooter was Emil Hager, Jr. with 3159-152x; High Marksman was Raymond Huttler with 3106-115. Elaine Bugyi was High Lady as well as high Expert; Gregory Tomsen was High Junior with 3170-177x. (Editor's note: Greg Tomsen apparently did not enter the aggregate matches and therefore was not listed in the aggregate ranking in the official score bulletin. His iron sight match scores totaled 1586-85, which would have placed him as high Expert nad 4th over-all in that aggregate. His any sight match scores totaled 1584-92, which would have placed him as 2nd high Expert in that aggregate. His aggregate total of 3170-177x would have placed him as high Expert and 7th over-all in the grand aggregate. While he missed out on the official awards, we feel that his fine shooting should receive public recognition in this report.) High Collegiate was Bonnie Smith from Longmeadow, Mass. with 3164-194. (Bonnie Smith was another young shooter who evidently did not make entry in the aggregates but did some very

(Continued on Page Eighteen)

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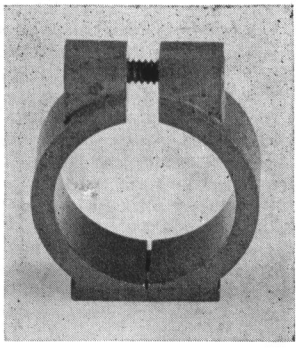

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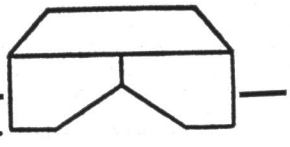

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Tournament Circuit

(Continued from Page Sixteen)

fine shooting and missed out on two aggregate awards.)

Phillip Martinez, Livingston, N. J., a Sharpshooter, won the 50 yard iron sight match with 400-30x, one X up on Sam Burkhalter. Burkhalter won the 50 meter iron with 398-23, a point up on Frank Boyd. Gregory Tomsen, Expert class, won the iron sight Dewar with 400-24, a point up on Burkhalter. Wallace Lyman, Middlefield, Conn. Expert, won the 100 yard iron sight match with 396-22x, just 2 X's up on Burkhalter.

Sam Burkhalter won the first any sight match, 50 yards. with 400-37x, a single X up on Loren Samsel. Gregory Tomsen won the 50 meter any sight with 400-26x, the only possible in this match. Laurence Moore won the final two any sight matches, scoring 400-26x over the Dewar course and 400-25x for the 100 yard match.

ILLINOIS SMALLBORE TOURNAMENT

The 24th Annual Black Hawk Open Tournament (smallbore rifle prone) was held on June 28th under a bright sunny sky with temperature in the 90's and a wind that the sailors call a WILLIWAW from 0 to 10 miles per hour and good mirage, and 63 competitors out to brave the heat.

Bob Wempe. using his new Womack barreled job stocked by Al Freeland and using Mark III ammo, almost made a clean sweep of the matches, taking all aggregates. He was 1st in the any sights 100 yards with 400-30x. 2nd in the 100 meter any sights with 398-25x, 1st in the iron sights Dewar with 399-30x. and 2nd in the iron sights 50 meter with 398-23x, a grand total of 1595-108x.

An Expert, James Johnson, won the 100 meter with 399-22x and J. E. Naas took the 50 meter iron sights with 399-29x.

Second in the Grand Aggregate was Naas, the defending champ, with 1591-97, and Marshall Grosskopp was 3rd with 1587-95. High Expert was James Johnson with 1584-89; High Sharpshooter Jon Len 1578-69; High Marksman George Eber, 1549-47, and High Junior, Karen Ellison with a good 1580-82x.

The heat did cause a fouling problem and the boys are still looking for the solution besides frequent cleaning.

Stan J. Patla

MAINE OUTDOOR PISTOL CHAMPIONSHIPS

A total of 62 (2 cancellations short of range capacity) competed in the 26th Annual Maine State Outdoor Pistol Tournament, fired on the Blue Hill range June 6 and 7, 1964. Of the total entry, 46 competed in "Service" category and 16 in "Civilian." Two of the civilian shooters were from Massachusetts and the balance were State of Maine residents. Of the 46 Service shooters, 29 were Maine residents or stationed at Maine military bases.

The Ten High "Service" grand aggregates were:

Erwin F. Chase, USCG	2582-93
Richard D. O'Keefe, USCG	2559-95
P. E. Melaragno, XIII USAC	2548-96
D. L. Theirault, XIII USAC	2526-73
G. R. McMahon, XIII USAC	2520-60
P. C. Blossfield, MSCG	2519-73
Robert A. Baxter, Air Res.	2512-64
Lt. Col. A. R. Panko, USAF	2488-59
Larry E. Hadley, USAF	2483-59
C. R. Peters, XIII USAC	2483-56

High Civilians

Lawrence W. Brown (Exp)	2479-56
Hugh W. Gorton (M)	2439-48
LeBaron C. Colt, Jr. (M)	2426-40

THE GUN AGGREGATES: .45 Cal. Ser.—Chase 859-28, O'Keefe 852-25, Theirault 837-25. Civ.—Brown 810-13, Gorton 789-13.

Center Fire—Ser.; Chase 860-31, Melaragno 848-28, Blossfield 841-22. Civ.—Brown 826-24, Gorton 818-19, Wilbur Ricker 810-13.

.22 Cal.—Ser.; O'Keefe 868-37, Baxter 865-28, Chase 863-34. Civ.—Colt 849-22, Brown 843-19, Gorton 832-16.

FOUR MAN TEAMS: .45 Cal.—USCG Blue 1116 over XIII Red 1108. Center Fire—XIII Red 1159-44, USCG Blue 1156-46, Maine State Police 1146-36. .22 Cal.—USCG Blue 1174-49, Maine State Police 1167-29, USCG White 1166-46, XIII Red 1164-46.

VERMONT STATE HANDGUN CHAMPIONSHIPS

A total of 88 competitors fired in one or more of the three gun categories at the 22nd Vermont State Pistol and Revolver Tournament, fired on the South Woodstock range of the Woodstock Rifle and Pistol Club June 20 and 21. Competitors were nearly evenly divided into the civilian and service categories.

Weather conditions were generally good, a rather stiff breeze Saturday for the .45 cal. matches, a blazing sun with temperature definitley on the warm side both days.

The handling of the match, timing, smooth operation, etc., is reported to have been beyond reproach, but that is the usual and expected situation at this match.

Most recent improvement at the range is a permanent building housing the statistical office and snack bar, with a wide porch which was very popular with the competitors and spectators. Also a new feature, the Wilson Sporting Goods Shop in Rutland, Vt. had a commercial exhibit of shooting goods and guns and they provided a number of desirable prizes among the contestants.

The high ranking grand aggregates were:

Service

Arthur C. Carr	2577
Demitri Stilu	2569
Gerald R. McMahon	2568
Richard Flagg	2567
Shirley L. Baker	2558

Civilian

Peter R. Kostecki	2542
Edward F. Mitchell	2530
Paul J. LaFleur, Jr.	2513
William W. Jamroz	2502

High Expert; Ser., George Anderson 2543; Civ., Cecil A. Williams 2493.

High Sharpshooter; Ser., Walter R. Army 2332; Civ., Fred D. Branch 2167.

High Marksmen; Ser., Alan D. Adams 2278; Civ., Westney P. Turner 2280.

GUN AGGREGATE WINNERS: .45 Cal.—Ser.; Arthur C. Carr, Farmington, Conn. 858; Gerald R. McMahon, No. Clar-

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endon, Vt. 854. Civ.; Peter R. Kostecki, Mattapan, Mass. 841; Roger B. Pedersen, Center Harbor, N. H. 834.

.22 cal.—Ser.; Demitri Stilu, Putnam, Conn. 874; Pasquale Melaragno, Providence, R. I., 871. Civ.; Paul J. LaFleur, Jr., Wilbraham, Mass. 861; Victor J. Amenta, Winchenden, Mass. 854; Kostecki 854.

Center Fire—Ser.; Richard Flagg, Warwick, R. I. 866; McMahon 864. Civ.: Edward F. Mitchell, Springfield, Mass. 856; Kostecki 847.

The XIII USAC "red" team won all the team matches, .45 cal. with 1143, 22 cal. with 1141 and Center Fire with 1151.

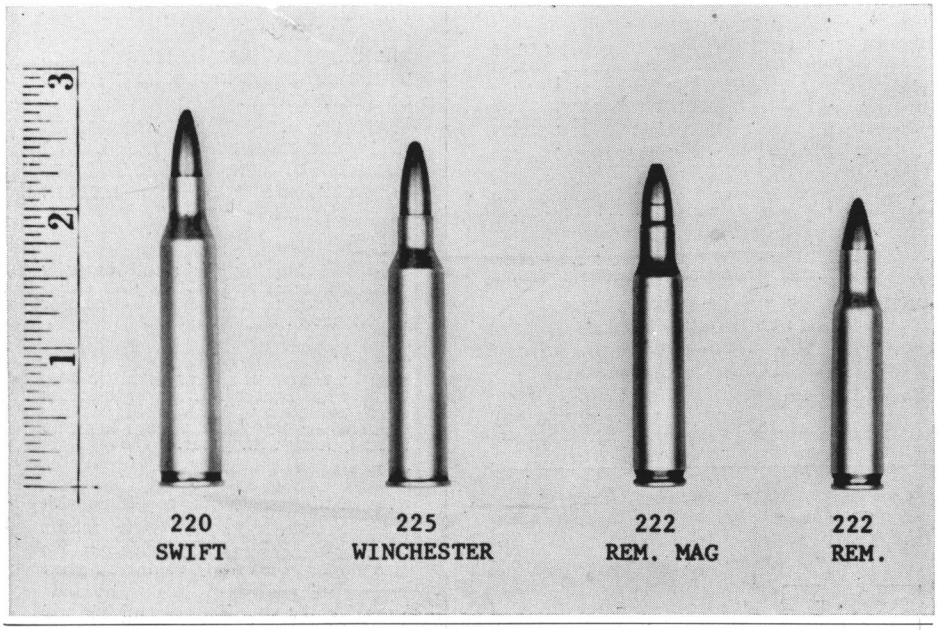
CONNECTICUT STATE PISTOL CHAMPIONSHIP

One hundred thirteen competitors fired over a beautiful two days for the Pistol honors of Conn. State, June 13 and 14, on the Blue Trail Range. The matches were sanctioned and sponsored by the Conn. State Rifle and Revolver Ass'n.

Arthur Carr from Farmington, Conn., competing in Service category, edged out Civilian Edwin Emmons of Canaan, Conn. by a slim one-point margin—2584-80x to 2583-88x.

Demitri Stilu (Ser.) won the .22 cal. aggregate with 879-29—Emmons was high Civ. with 856-22. Richard Flagg (Ser.) won the Center Fire aggregate with 865-40—Emmons high Civ. with another 856-22. Emmons (Civ.) won the .45 cal. aggregate with 858-35x—Arthur Carr was high Ser. with 855-22x.

(Editor's note: Until quite recent years no specific "State Pistol Championship" was sponsored by the Conn. State Ass'n. As late as 1959, facilities for pistol shooting at the Blue Trail Range appeared to be a rather make-shift few targets at the extreme right end of the smallbore rifle range. The Conn. Ass'n is to be congratulated on the husky growth of its pistol shooting program, and the Blue Trail Range Corp. is also to be congratulated for providing facilities for conducting such a large registered pistol match.)



THE 225 WINCHESTER CARTRIDGE

The just announced 225 Winchester cartridge, for which the new Model 70 Varmint and Standard model rifles will be chambered, reads as if this might be an interesting new round.

The cartridge case is of semi-rimmed design, head-spacing on the shoulder but with the rim slightly larger than the case body diameter to fit the regular 30-06 type bolt face without modification. The case is 2.50 inches long and is stated to have approximately 33 grs. powder capacity.

Winchester advertised velocities are 3800 fps with 50 gr. bullet, 3650 fps with 55 gr. and 3500 fps with 60 gr. bullet. We presume these velocities would be from the 24 inch long Varmint rifle barrel and would be slightly lower in the 22 inch Standard model. The initial factory loading will be with a 55 gr. pointed soft-point bullet.

Accuracy-wise, the Winchester announcement states: "The 225 Winchester is capable of maintaining a maximum extreme spread under 1.25 inches at 100 yards for 10-shot groups." We do not question that the cartridge and rifles may be "capable" of that accuracy, but we do suspect that if every purchaser expects that accuracy from every "off-the-shelf" production rifle, without any tuning-up, some will be doomed to disappointment.

For similar bullet weights within the 225 case capability, we would expect better load efficiency (slightly smaller powder charges with higher load density to attain similar velocity) than from the now obsoleted 220 Swift. It will logically give flatter trajectory and more effective striking energy at longer ranges than the 222 Remington Magnum cartridge. It will naturally not equal the maximum performance of the 220 Swift or some of the still popular .22 cal. wild-cat cartridges.

P. H. T.

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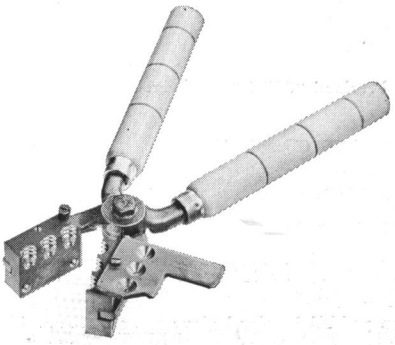

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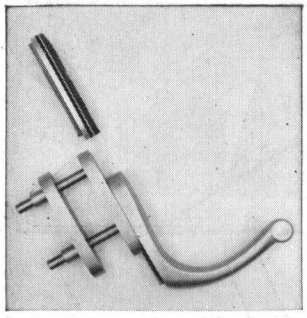

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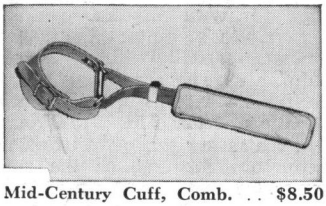

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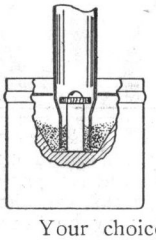

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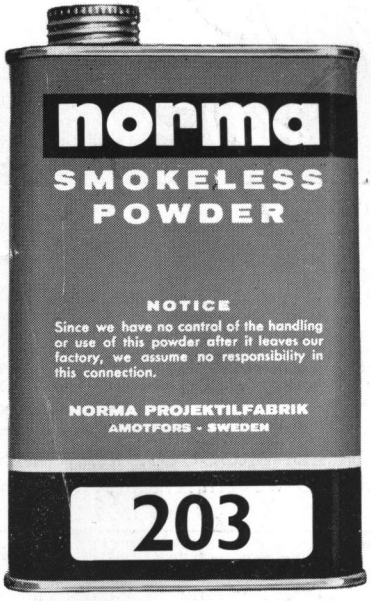
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